Illinois U Library

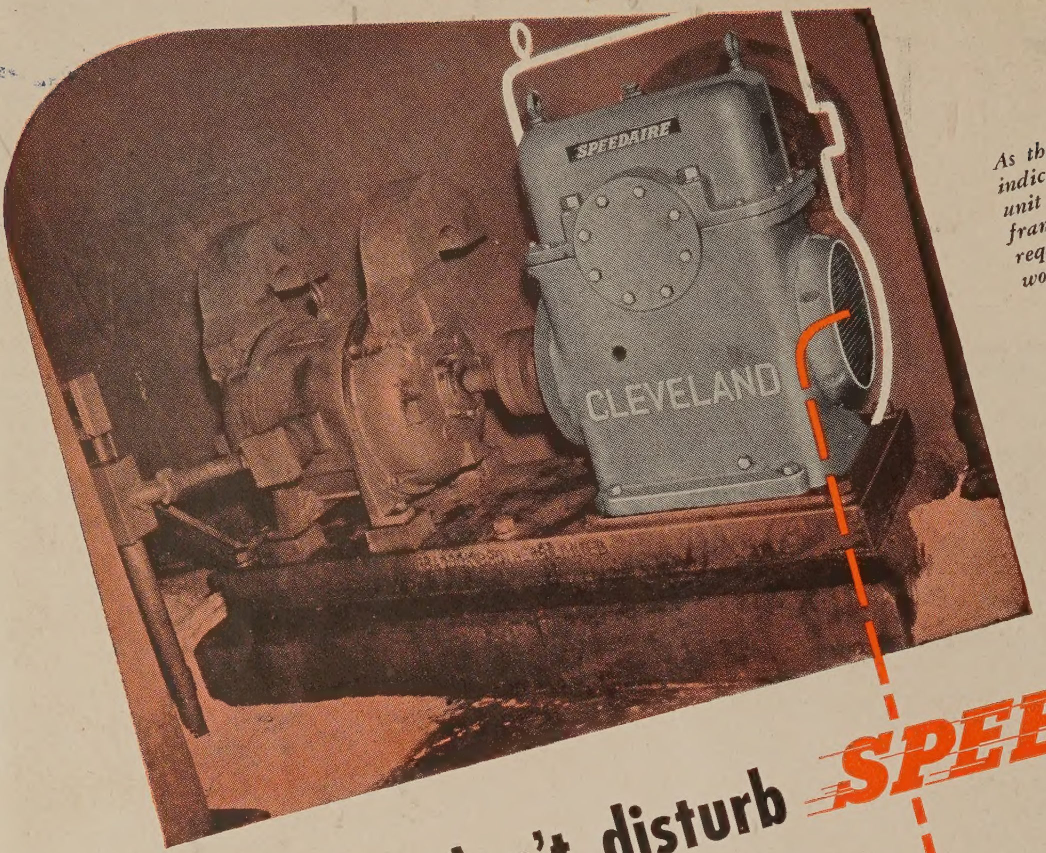
Contents—p. 55
Machine Tool Show in Review—p. 60
Overseas Banquet Pictures—p. 62
Car Program Sidetracked—p. 111
Arabian Pipe Okayed—p. 114
Court to Hear Cement Case—p. 114
Marshall Plan—p. 115
Foreign Interest at Tool Show—p. 117

The IRON AGE

OCTOBER 2, 1947

INLAND STEEL
INLAND
the Right Steel
Dependable Service
Friendly Cooperation

U OF I LIBRARY



As the white outline indicates, a standard unit of much greater frame size would be required to do the work of Speedaire.

Floods of suds don't disturb SPEEDAIRE

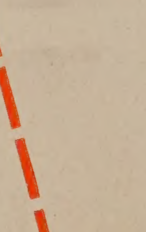
THIS Speedaire drives a stock chest agitator in a paper mill. The two airducts or ventilators on the motor protect it against drenching during the daily washdown with water. Foam from stock and black liquor, which sometimes builds up as high as 8 or 10 feet during starting, is no handicap to Speedaire, as its efficiency is unaffected by either moisture or dust.

Compared to a conventional worm gear drive of the size required to do this work, Speedaire occupies 30% less space and weighs 200 lbs. less. Speedaire saved $156 in installed cost.

Speedaire is Cleveland's new fan-cooled worm-gear speed reducer. Because it is fan-cooled, Speedaire will do more work—will deliver up to *double the horsepower* of standard worm units of equal frame size, at usual motor speeds. It can be installed economically on many applications where other types have been used heretofore—giving you the advantages of a compact right-angle drive. Speedaire gives the same long, trouble-free service characteristic of all Clevelands.

Send for Catalog 300 for a full description. The Cleveland Worm & Gear Co., 3252 E. 80th St., Cleveland 4, O.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication.
In Canada: Peacock Brothers Limited.

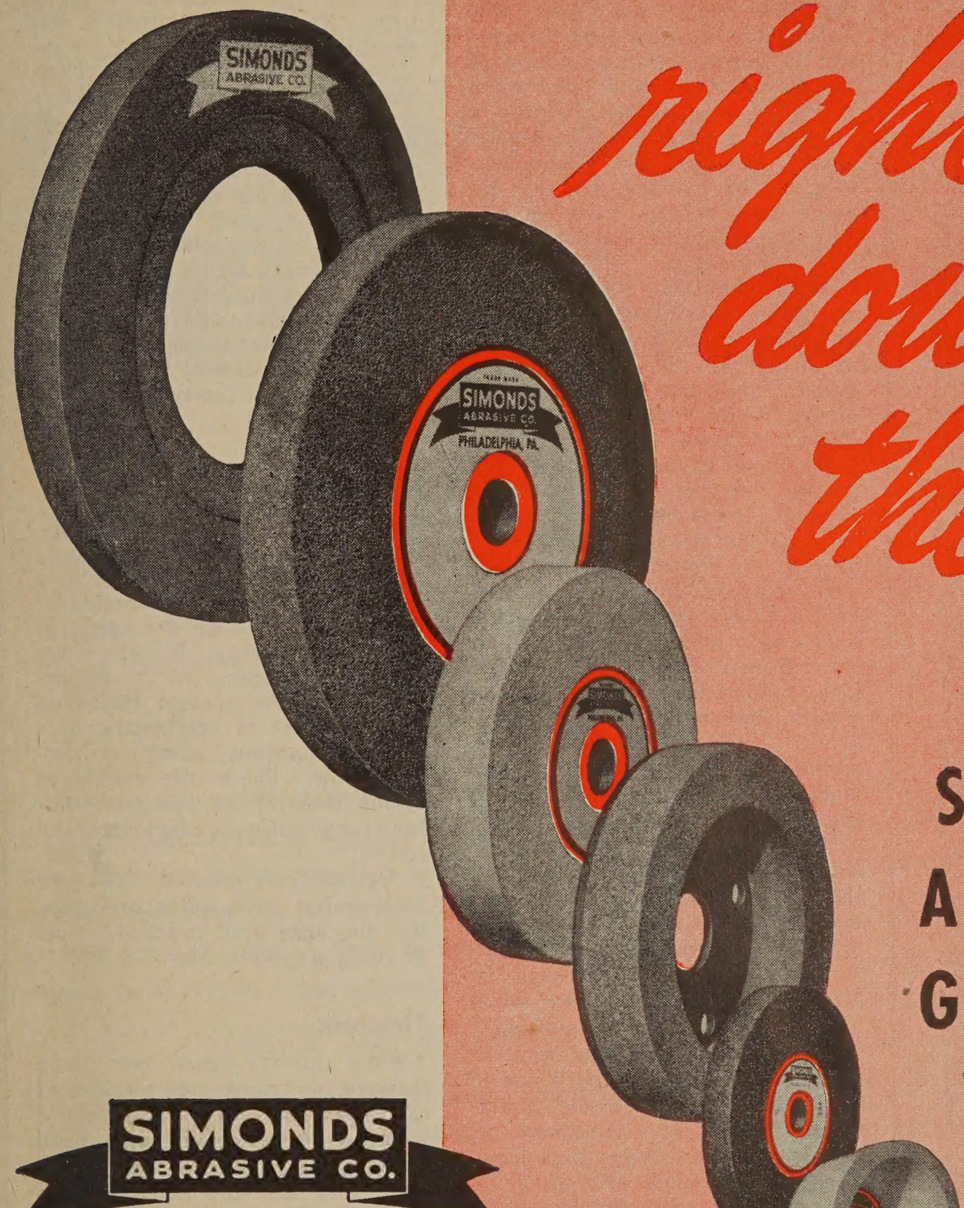


CLEVELAND
Worm Gear
Speed Reducers

THE IRON AGE, published every Thursday by the *CHILTON CO. (INC.)*, Chestnut and 56th Sts., Philadelphia 39, Pa. Entered as second class matter Nov. 8, 1932, at the Post Office at Philadelphia under act of March 3, 1879. $8 yearly in North America and South America, Foreign $15. Vol. 160, No. 14.

EFFICIENCY . . .

right down the line


SIMONDS
ABRASIVE CO.
SIMONDS
ABRASIVE CO.
PHILADELPHIA, PA.

WITH SIMONDS ABRASIVE GRINDING WHEELS

SIMONDS
ABRASIVE CO.

SIMONDS ABRASIVE COMPANY
is a division of
SIMONDS
SAW AND STEEL CO.
Fitchburg, Mass.
Saws, Machine Knives, Files

Other Divisions:
SIMONDS
STEEL MILLS
Lockport, N. Y.
Special Steels

SIMONDS
CANADA SAW CO. LTD.
Montreal, Can.
Simonds Products for Canada

Precision manufacture, proved performance, easy selection. These features of Simonds Abrasive's complete grinding wheel line mean fast action, lasting efficiency, fewer dressings all along your grinding production line. Learn how you can line up top results with Simonds Abrasive Grinding Wheels, Mounted Wheels and Points, Segments, Grains, Bricks and Sticks. Send now for free Data Book. Meanwhile, for your immediate wheel needs consult your nearest Simonds Abrasive Distributor who carries complete stocks.

SIMONDS ABRASIVE COMPANY, TACONY AND FRALEY STREETS, PHILADELPHIA 37, PA.
DISTRIBUTORS IN ALL PRINCIPAL CITIES

42406

WHAT DOES A BOLT & NUT MEAN TO YOU?

Accurate Threads
for speedy assembly.

True to Size
assuring perfect fit.

Scientifically Produced
assuring maximum
strength.

CLARK BROS. BOLT CO.
Bolts • Nuts • Screws
&
Rivets

are so produced with
a Century of Experience behind them.

Specify and demand by name from your Jobber or Mill Supply House.

CLARK BROS BOLT CO.
MILLDALE, CONN.

Fatigue Cracks

BY C. T. POST

Steel Ore

• • During the recent war we recall one fellow out West who stumbled on a placer deposit carrying an improbable combination of iron, tungsten, and chromium which he smelted directly into a hard-facing material. The deposit wasn't the nation's wartime salvation, as he claimed, but he did right well selling stock in the mining operation, making it his own salvation.

About the same time, currency was given to the tale of the young and eager bureaucrat who ordered a survey of the nation's brass mines. The same story circulated during World War I, but we liked it even if it was apocryphal.

No inquiries have come in for a long time now as to how things are going in the nation's steel mines, though, and the occasional references in the financial press to blast furnace production of steel give us only a hollow smug satisfaction.

It was a pleasure, therefore, to learn from The Commonwealth, official publication of the Commonwealth Club of California, that Dr. J. R. Mahoney, eminent Utah economist, had addressed that august body on "The Future of the West," stating in part:

"In a study of the geological shifts of the steel industry we find that so many mistakes have been made, and that we had had such limited sources of information, that failures have been numerous. It seems as though such losses could in many cases have been avoided."

Dr. Mahoney, who has written authoritative books on the Western steel industry, undoubtedly didn't mean "geological" the way it sounds. But we wager that some Western capitalists are going to worry themselves sick now over whether the next earthquake deposits an NE8640 mine instead of a lode of hot-rolled sheets near San Francisco.

Dream Girl

• • Ever since, aged 8, we dreamed of discovering Captain Kidd's treasure and the next morning found a penny under the pillow, we've believed firmly in the prescience of dreams. One of our operatives, sitting behind Don James of the American Iron & Steel Institute the other day on a homebound New Haven commuters' train, gave us further proof of the somnolent subconscious. The day had been a sweating scorcher. Don slumped into the front seat of the car and was in dreamland in a jiffy. At first his expression was stern as a judge's, befitting his position with the Institute. Then, like the sun bursting through a cloud, a smile crept over his countenance. The beads of perspiration dried up, his facial muscles relaxed, and his mouth broadened into a lasting grin. Our operative, in search of the mirage that had brought such a happy grin, glanced over Don's shoulder. Lying on his lap was a magazine opened to a full color advertisement in which a golden haired damsel thrust out a stein of frothy, frosty golden Milwaukee nectar.

Honest Eggs

• • Coming home from the Machine Tool Show we got an early start, stopping for breakfast at a greasy little dive in a section of the city haunted by the spirit of the late Al Capone. But the silver bore the monogram of the Palmer House and the spotted tablecloth gave evidence of originating in a private mansion along millionaire's row. The waiter caught us eyeing them as he took our order for orange juice, poached eggs, and coffee.

"Mister," he pleaded, "you can have orange juice, coffee, and eggs. But the eggs ain't poached. Cost 89 cents a dozen at the A & P."

Timeless

• • We always pick our way through the typewritten tersities of the Newsfront page, our neighbor to the rear, with great care. With military and trade secrets being what they are, the nubbin of an item is likely to lie in the phrasing or in invisible ink between the lines. We're still scratching our head over one a couple of weeks ago concerning a kitchen mixer with nylon gears. Someone left it running in a bowl of sand, no doubt mixing sandwich filling for a windy day beach party. What caught our eye was the phrase, "Three months later, after 2400 hr of continuous operation the nylon gears were still running." Thumbing through our desk calendar we can find no three months in sequence that add up to more than 92 days, or 2208 hours. Looks like some smart management consultant finally has discovered the secret of 26 2/23 hr days.

AN ANNOUNCEMENT of IMPORTANCE TO BUYERS of CUTTING OILS –

Houghton presents 4 new series of

CUT-MAX OILS

Highly fortified

Light in color

Easy to select

Culminating a year's development work in evaluating and simplifying a lengthy list of cutting oils, Houghton now introduces four new series described below—covering the full range of requirements for straight cutting oils. A new folder giving further details is ready for your request.

CUT-MAX 100 SERIES

High in saponifiable fatty oil content. Contains no sulphur or extreme-pressure additive. Primarily intended for use in machining non-ferrous metals, or for machine tools having bearings of brass or bronze.

CUT-MAX 200 SERIES

This is the heavy-duty group—fortified by added active sulphur (not merely the natural sulphur content of the oil itself) and by an extreme-pressure additive well blended into the cutting fluid. Included in this series are five oils identical in properties and varying only in viscosity, so that blends may be made to suit the needed fluidity without altering additive balance.

CUT-MAX 300 SERIES

This series fills a need for cutting fluids high in saponifiable, specially sulphurized content, but free from chlorine so that bright machined surfaces will not stain or dull. A variety of viscosities is provided.

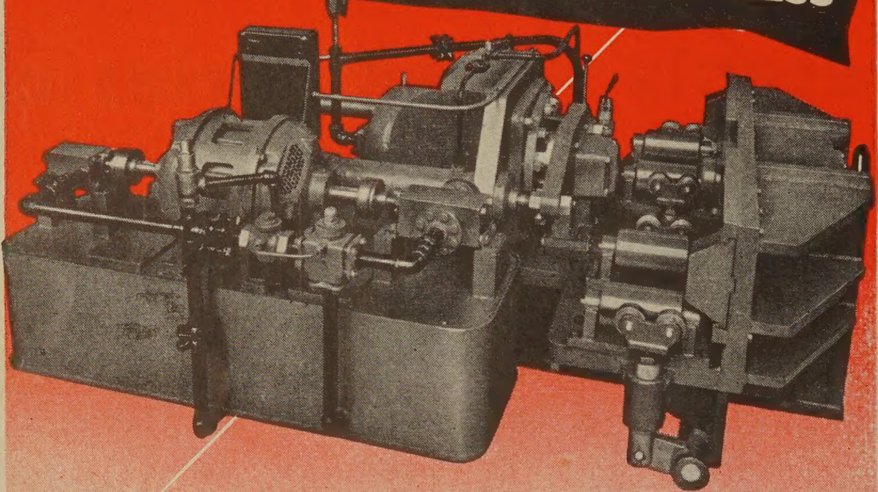
CUT-MAX 400 SERIES

A complete new development—light-colored, clear oils mildly but effectively treated to reinforce nature's best petroleum stocks, and to offer an excellent money value for cost-conscious buyers. Whereas light-colored oils in the past have tended to lower cutting efficiency, the Cut-Max 400 Series include added sulphur (active—not inert) and E. P. additive, yet retain the clear appearance desired by many operators of automatics.

E. F. HOUGHTON & CO. PHILADELPHIA AND ALL PRINCIPAL CITIES

Smooth...Fast...Accurate

THE R. D. WOOD STRAIGHTENING PRESS



For STRAIGHTENING
SHAFTING
AXLES
ROUND BARS
RODS

The modern design and quality construction of this 200-ton R. D. Wood Shaft Straightening Press are your guarantee of smooth, fast, accurate handling of work . . . *plus* increased production.

The press frame is constructed of heavy welded steel and carries individual cast steel main and pull-back cylinders. Press table is 73" long with a gap of 13" between dies. Resistance blocks are movable on the vertical frame face. The table is provided with four heavy stationary rollers for shifting shafts lengthwise, as well as four sets of lifting and turning rollers operated by an air cylinder. An adjustable stop, which will take full press load, is located in the center of the press frame to prevent over-bending. High and low pressure pumps, operated by a 20-hp motor, provide a ram speed of 72" per minute for low pressure closing. High pressure ram speed is 8.5" per minute. Send today for descriptive literature. R. D. Wood Company, Ledger Building, Independence Square, Philadelphia 5, Pa.

When faced with problems involving hydraulic presses and equipment, it will pay you to consult with R. D. Wood engineers.

HYDRAULIC PRESSES AND VALVES FOR EVERY PURPOSE • ACCUMULATORS • ALLEVIATORS • INTENSIFIERS

R.D. Wood Company
EST. 1803

Dear Editor:

STEEL ON THE BLOCK

Sir:

I think the editorial in the Aug. 28 issue entitled "Steel on the Block" hits the nail on the head. I have often wondered why the large steel producers do not show as separate or supplementary items in their balance sheets, what their extra costs would be to replace equipment at today's prices. As you well point out, equipment prices are today in many cases twice that of prewar and are being depreciated tax wise on prewar costs. If we are to continue in our economy as at present, it is apparent that some relief must be had on higher tax exempt depreciation rates.

E. J. CARLSON
President
Indiana Forge & Machine Co.
East Chicago, Ind.

PLASTIC ADHESIVES

Sir:

I am designing a metal clip to be used to hold a piece of glass tubing for a neon sign. To hold the clip and tube together, a good glue is preferred, and I recall that the Chrysler Corp. made such a product. The glue must withstand a good pull by hand and at frequent intervals. I would appreciate your giving me the name of any manufacturers of this type product.

G. M. GOLDSMITH, JR.
Cincinnati

● The adhesive produced by Chrysler Corp., Detroit, is known as Cycleweld and a similar adhesive, known as Redux, is manufactured by the Resinous Products Chemical Co., 222 W. Washington Sq., Philadelphia. The glues were described in the issue of Nov 14, 1946, p. 91.—Ed.

SULFUR REDUCTION

Sir:

In the items covered by Newsfront, Aug. 14 issue, you make mention of the use of lithium and lithium compounds for reducing sulfur in steel. We are very much interested in this piece of news and would be grateful if you could send us any additional information on the subject.

EDWARD W. WRIGHT
Executive Vice President
Fort Pitt Malleable Iron Co.
Pittsburgh

● We are forwarding your request to the source of our information.—Ed.

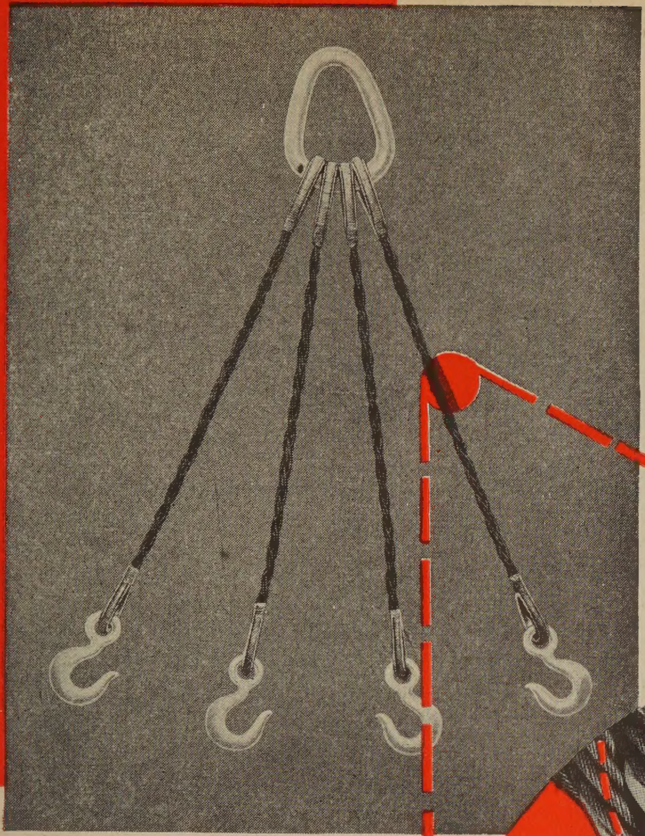
OTS REPORTS

Sir:

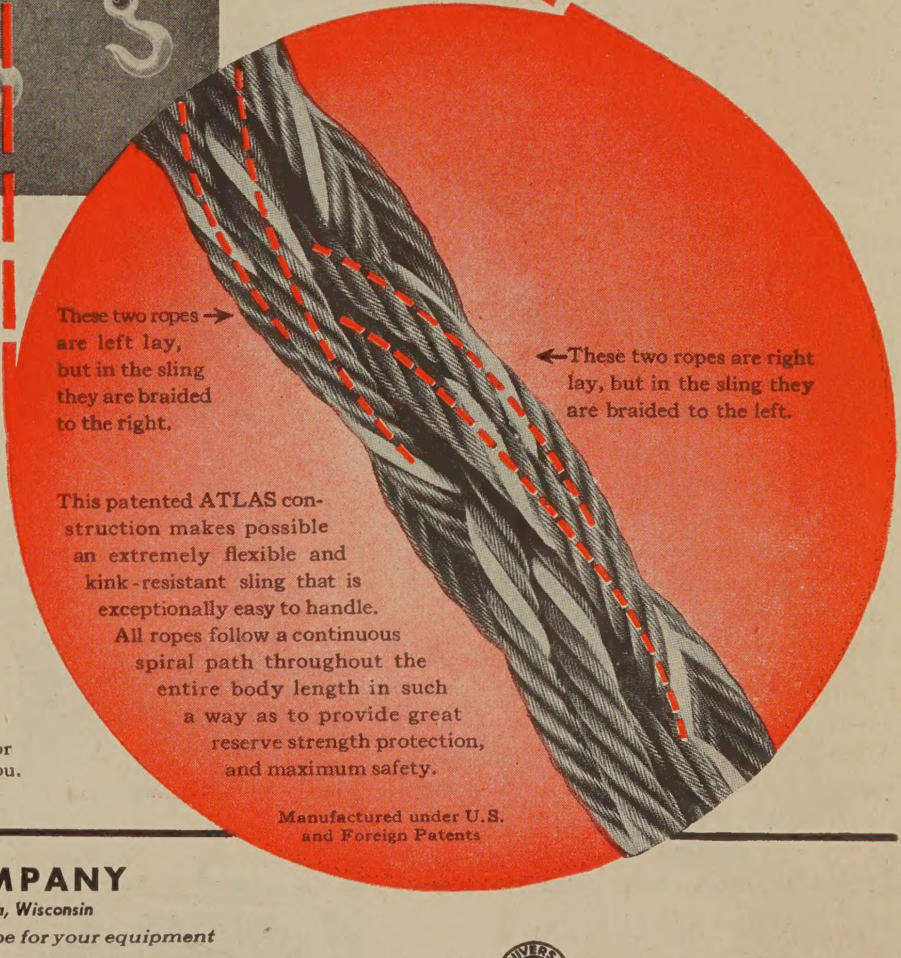
We are very interested in obtaining a copy of the German Air Research Ministry wartime report entitled "Aluminum Radiators" which was abstracted on p. 62 of the July 31 issue. We ordered a copy from the Office of

Don't take chances with safety! Always specify

MACWHYTE *Atlas* *Braided* WIRE ROPE SLINGS!



4-leg, 8-part, ATLAS Braided Sling with drop-forged hooks—just one of many sizes, types and assemblies custom-made for your safety.



These two ropes → are left lay, but in the sling they are braided to the right.

← These two ropes are right lay, but in the sling they are braided to the left.

This patented ATLAS construction makes possible an extremely flexible and kink-resistant sling that is exceptionally easy to handle. All ropes follow a continuous spiral path throughout the entire body length in such a way as to provide great reserve strength protection, and maximum safety.

Manufactured under U.S. and Foreign Patents

Rigging up loads for connection to crane hooks is a hazardous business. Only slings with adequate safety factors are good enough for safe handling in your plant. For your safety, breaking strengths and safe loads at various angles of use are listed for each size of Macwhyte ATLAS Sling, and published in Macwhyte Sling Catalog S-7.

Send for Sling Information!

Ask for your copy of Macwhyte Sling Catalog S-7 and book of photographs "Safe Slings in Industry" 44-1. Mail request on your Company letterhead to Macwhyte Company or any of our distributors or mill depots near you.

MACWHYTE COMPANY

2911 Fourteenth Avenue, Kenosha, Wisconsin

Manufacturers of the CORRECT wire rope for your equipment

Left & Right-Lay Braided Slings · Aircraft Tie-Rods
Aircraft Cable · "Safe-Lock" Swaged Terminals

Mill Depots: New York · Pittsburgh · Chicago · Ft. Worth · Portland
Seattle · San Francisco · Distributors throughout the U.S.A.

Member National Safety Council

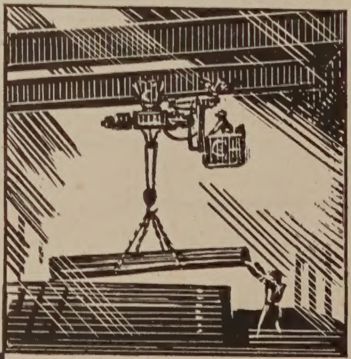
NO. 843-S

RIGHT-LAY
MACWHYTE SLINGS FOR INDUSTRY
"Lifting safety to new heights"
LEFT-LAY
Macwhyte Wire Rope Slings are made to meet the capacity of any crane built

SHOES OR SHIPS OR SEALING WAX

Regardless of what you make, it's safe to assume you have the problem of lifting, moving and depositing raw materials, semi-finished or finished products. Where such loads involve weights from 1/8 to 20 tons and where they must be handled smoothly, easily, economically and efficiently, consider the advantages of Shepard Niles hoists.

America's oldest builder of electric hoists and cranes offers you more than 5,000 styles and sizes from which to make your selection. Without obligation on your part, trained, experienced Shepard Niles engineers will study your requirements and recommend the hoist most suitable for the job.



Moving heavy loads, indoors or out, is no job for human muscles or inefficient handling equipment. If you want to extend your improvements in shop practice to material handling, ask Shepard Niles engineers to assist you in selecting the electric crane to handle your loads with speed, safety and economy.

Shepard Niles
CRANE & HOIST CORPORATION

356 SCHUYLER AVE. • MONTOUR FALLS, N. Y.

Technical Services some time ago but have not received it, no doubt due to the fact that the office has suspended operations. Would it be possible to borrow your copy to make a photostat for our own files?

G. F. RENNER
Aluminum Laboratories, Ltd.
Kingston, Ont.

● Our information is based on an abstract of the report and is not complete. However, as late as September 3 we received additional abstracts from them and the address was the same, that is, Office of Technical Services, Dept. of Commerce, Washington 25, D. C. We would suggest that you follow up on your earlier correspondence. So far as we know they are still making available photostatic and microfilm copies of their reports.—Ed.

COLD-ROLLED SHEETS

Sir:

. . . Could you give us a list of mills who might possibly be able to furnish us with cold-rolled sheets. We realize that this type of sheet is very hard to obtain but if you could let us have such a list of companies rolling this, we will try to contact them.

D. A. ROSS
Lines Bros. (Canada) Ltd.
Montreal

WORK REST BLADE

Sir:

On p. 79 of the Sept. 4 issue there is an interesting article on a centerless grinder work blade as developed by Cliff Co., Chicago. Would you mind, please, sending me their Chicago address.

NELS G. JOHNSON
Sales Manager, Knife Div.
Simonds Worden White Co.
Dayton

● Cliff, Co., 17 N. Leclaire Ave., Chicago 44.—Ed.

THREADLESS JOINT

Sir:

We have noticed on p. 112 of the Aug. 14 issue a photograph in the lower left hand corner captioned Threadless Joint. The information included with this photograph leads us to believe that we would be further interested in learning more about the coupling under test. Can you advise us where further information can be obtained.

E. H. WARDLE
Sales Engineer
Steel & Tubes Div.
Republic Steel Corp.
Cleveland

● See reference in Dear Editor, Sept. 11 issue.—Ed.

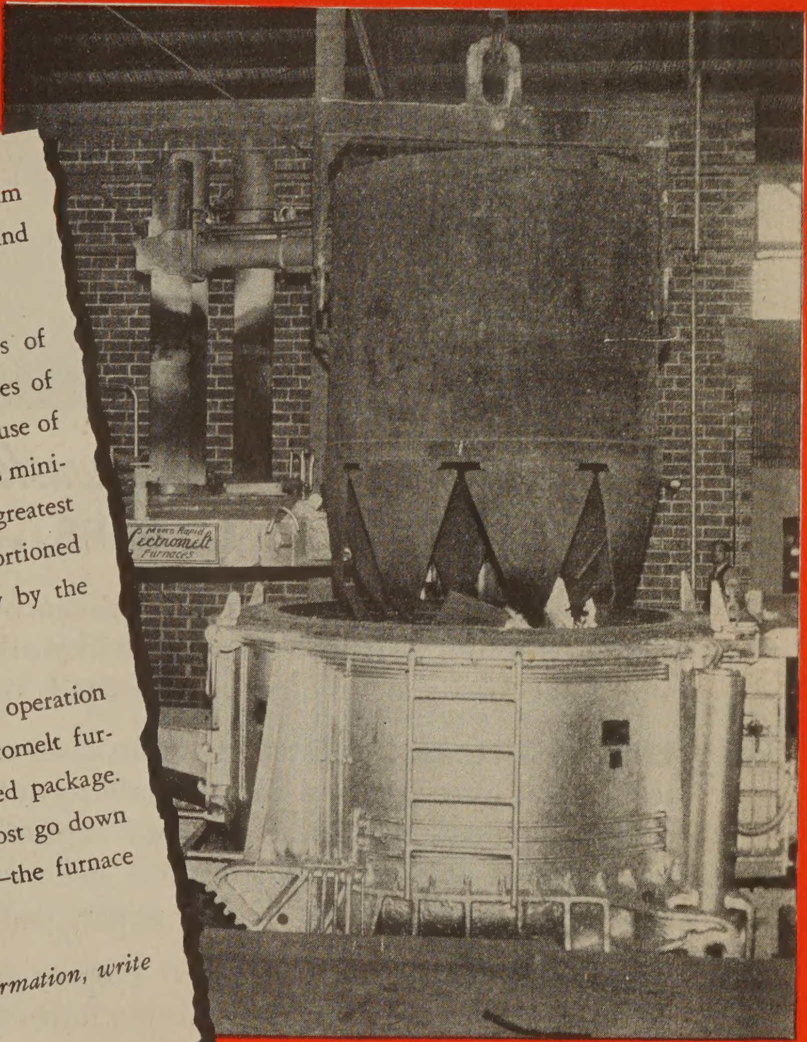
FERROALLOY PRODUCTION

Sir:

In the July 24 issue, p. 145, I noted the article, "Production in Canada of Pig Iron During May Held at About 70 Pct," with interest especially in regard to production of ferroalloys for 1947. I wish to

Built to Last . . .
And to Save You Money

MOORE RAPID
Lectromelt
FURNACES



Long, efficient service with minimum maintenance costs—that's Lectromelt. And that's money in your pocket.

Simplicity of design and ruggedness of construction are characteristic features of Lectromelt furnace equipment. The use of complicated operating mechanism is minimized, and parts subject to the greatest stress and wear are carefully proportioned for extra strength and durability by the best materials.

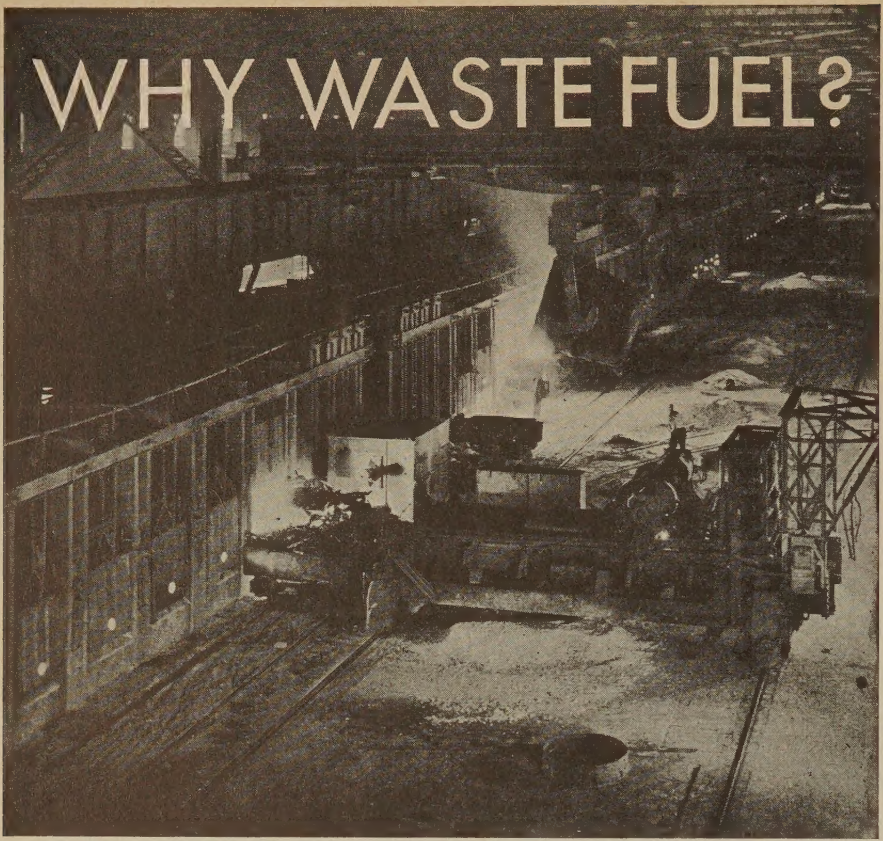
Flexibility, rapidity, economy of operation—these characteristics of Lectromelt furnaces are yours in a long-lived package. Watch your total operating cost go down when you select Lectromelt—the furnace that's built to last.

For complete, detailed information, write today.

Manufactured in

England	Birlec, Ltd., Birmingham
France	Stein et Roubaix, Paris
Spain	General Electrica Espanola, Bilboa
Belgium	S. A. Belge Stein et Roubaix, Bressoux-Liege

PITTSBURGH LECTROMELT FURNACE CORP.
PITTSBURGH 30, PA.



Therm-O-flake *prevents waste*
BY REDUCING HEAT LOSSES...

MORE THAN 25% of Open Hearth fuel can be wasted through heat lost through brickwork and heat absorbed by cold infiltered air.

Therm-O-flake INSULATIONS are designed to reduce heat losses and seal furnace walls against cold air infiltration. These are used regularly on hundreds of open hearth furnaces and save steel producers thousands of fuel dollars daily.

Therm-O-flake ENGINEERS will prepare an accurate fuel economy survey of existing furnaces in your plant and submit complete thermal data and recommendations for safe maximum insulation of any open hearth furnace, on request.

Illinois Clay Products Company
JOLIET, ILLINOIS

Exclusive Manufacturers of
Therm-O-flake
open hearth Insulation

ascertain if a breakdown of the ferro-alloy tonnage is available or can be obtained at its source. Will appreciate your advice.

J. C. VIGNOS
Vice President
Ohio Ferro-Alloys Corp.
Canton, Ohio

● Your request has been referred to our Canadian editor who wrote the article to which you refer.—Ed.

EXTRUDED ELECTRODES

Sir:

We are interested in the manufacture of extruded electrodes up to ¼ in. diam and ask you to kindly send us a list of manufacturers of the necessary machines (rod cutting machine, extruding machine, etc.), furthermore a list of suppliers of fluxes.

FRANCISCO BOEHM
Diatan Soc. Ltda.
Montevideo, Uruguay

BAINITIC HARDENING

Sir:

Would you please send me tear sheets of the article, "Practical Aspects of Bainitic Hardening of High Speed Steel" by Baer and Nehrenberg, which appeared in the Sept. 4 issue, p. 65.

M. J. R. MORRIS
Director of Research
Republic Steel Corp.
Cleveland

WATER-REPELLENT CANOPY

Sir:

Will you please advise the name of the company which manufactures the water-repellent olive drab canopy used on the new Chrysler "Traveler," as shown in the Aug. 14 issue, p. 88.

W. H. LAVIER
Industrial Div., Talon, Inc.
Meadville, Pa.

● Textileather Co., Toledo, Ohio. The material is No. 10 water-repellent duck.—Ed.

REQUEST FROM INDIA

Sir:

I shall be obliged if you can kindly send us a copy of the brochure "Directory of 10,000 Trade Names."

T. L. RAMA CHAR
Industrial Chemist
Indian Institute of Science
Malleswaram P. O., Bangalore, India

● The directory is available to subscribers at $3 each for one or two copies; $2.50 each for three to nine copies; $2.00 each for 10 or more copies.—Ed.

SOLDERING ALUMINUM

Sir:

I have just finished reading the article entitled "Soldering Aluminum" on p. 53 of the June 26 issue, and find it most interesting. We handle aluminum and inasmuch as many of our metal fabricators are not familiar with the proper process for soldering this metal I thought it would be very helpful to our sales

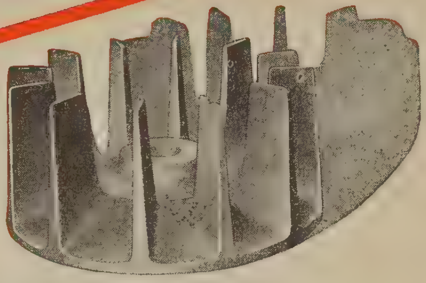
HERE'S THE ANSWER TO YOUR ALUMINUM CASTING PROBLEM

Don't puzzle needlessly over whether your aluminum castings should be made by permanent mold, sand or die casting process. Ask Permite aluminum engineers to work out the correct answer according to your particular product needs, quantity and cost requirements.

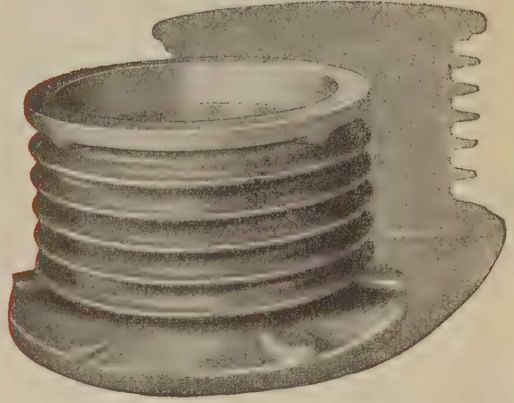
The quarter-century of experience of Permite engineers in working with aluminum alloy castings will be placed at the service of your own design and production engineers and cost estimators. Recommendations will be unbiased, as all three processes are used in the modernly equipped Permite aluminum foundries.

Shape of the part, whether simple or complex, section thickness, dimensional accuracy required, necessary mechanical properties, surface finish desired, number of castings needed, production rate expected, approximate cost ratios — these are some of the important factors studied in determining casting methods.

Choice of the right type of aluminum castings can make a big difference in the production rate and cost of your product. So put the problem up to us. Don't hesitate to tell us about your parts requirements and to ask for recommendations and cost estimates.



PERMITE PERMANENT MOLD CASTING



PERMITE SAND CASTING

PERMITE DIE CASTINGS

PERMITE

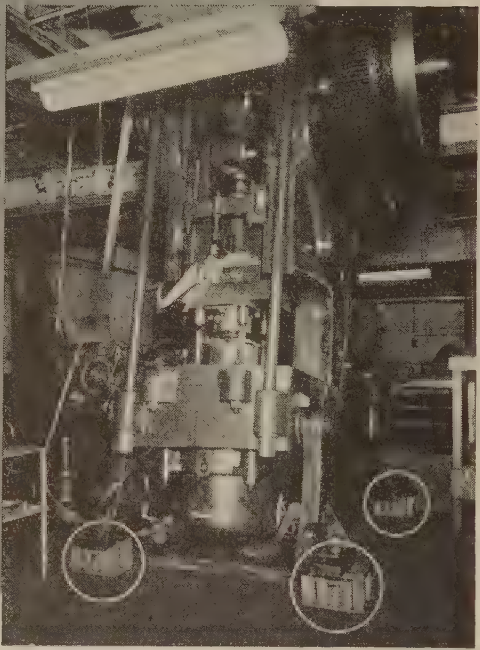
ALUMINUM INDUSTRIES, INC.

CINCINNATI 25, OHIO

DETROIT: 809 New Center Building. NEW YORK: 9 Rockefeller Plaza. CHICAGO: 64 E. Jackson Boulevard. ATLANTA: 413 Grant Building

ALUMINUM PERMANENT MOLD, SAND and DIE CASTINGS...HARDENED, GROUND and FORGED STEEL PARTS

U OF I
LIBRARY



"Tailor Made" VIBRATION CONTROL ...by KORFUND For All Impact Machinery

Whether a press is large or small, its operation creates vibration. And uncontrolled vibration wears out machinery prematurely, weakens building structure, causes accidents and breakdowns, spoiled work, and lowered employee efficiency.

Korfund Vibration Control isolates vibration and reduces its costly effects. Years of experience with thousands of successful installations have resulted in the development of standard Vibro-Isolators in a complete range of sizes. These practical, efficient units are recommended for punch presses, drop hammers, shears and other machinery. They are sold on a "Satisfaction Guaranteed" basis.

Write for bulletins giving further information. If you'll send us details of your machinery—type, make and size—we'll gladly submit recommendations without obligation.

"When it's a question of vibration, Korfund has the answer."

KORFUND VIBRATION CONTROL

THE KORFUND COMPANY, Inc., 48-35 32nd ST., LONG ISLAND CITY 1, NEW YORK

force if some of these tear sheets were available. I could use about 25.

F. O. STORZ
Sales Manager
Mapes & Sprowl Steel Co.
Union, N. J.

CORRECT DIMENSION

Sir:

We would like to call your attention to an error in the release on the new McGill cam yoke roller bearing. The story is printed on p. 86 of the Sept. 4 issue. In the sentence which reads, "Shaft sizes range from 0.250 for the CYR-3/4 to 0.125 for the CYR-4 in., the correct dimension is 1.250 for the CYR-4.

JOSEPH P. WAITZ
Jaqua Advertising Co.
Grand Rapids

PRODUCTION CONTROL

Sir:

Some time ago an article appeared on production control, written by a man from the Caterpillar Co. We have not been able to locate the article in your magazine. Would you please send us a copy of this article?

GEORGE W. KAMPMANN
Accounting Dept.
Geo. J. Meyer Mfg. Co.
Milwaukee

● The two part article appeared in the June 26 and July 10 issues.—Ed.

STEEL MILLS

Sir:

Will you please send us a directory or list of the steel mills in the U. S. We are interested particularly in those mills rolling plates, bars, flats structural shapes, etc.

C. F. TUBB
General Manager
Dallas Iron & Wire Works, Inc.
Dallas

● Lists of steel mills rolling several types of products are being forwarded. For a complete list, however, we suggest the Iron and Steel Works Directory of the U. S. and Canada, published by the American Iron and Steel Institute, 350 Fifth Ave., New York.—Ed.

INCREASING TOLERANCES

Sir:

On pp. 58-61 of the July 3 issue, there was an article entitled "How to Increase Tolerances and Obtain Closer Fits" by Edmond E. Bates. If available we would like to receive a reprint of this paper for our reference.

ARTHUR E. MILLER
Design Engineer
Scott Aviation Corp.
Lancaster, N. Y.

TOOL STEEL DIRECTORY

Sir:

The Naval Gun Factory would appreciate the receipt of one copy of the Directory of Tool Steels.

T. D. RUDDOCK
Rear Admiral, U. S. Navy
U. S. Naval Gun Factory
Washington

The
IRON AGE

Vol. 160, No. 14 October 2, 1947

Editorial

The Despised Shopping List 57

○ ○ ○

Machine Tool Show in Review

Highlights of the 1947 Machine Tool Show 60
Illustrated Review of Exhibits at the Show 64

○ ○ ○

Features

Fatigue Cracks 44
Dear Editor 46
Newsfront 59
Assembly Line 88
Washington 92
West Coast 96
Personals and Obituaries 100
European Letter 106
Industrial News Summary 108
News of Industry 111
Gallup Polls 121

○ ○ ○

News and Markets

50 Years Ago 116
New Construction 118
Alloy Steel Production 119
Industrial Briefs 120
Anglo-Egyptian Mill Needs No Coke 122
Carnegie-Illinois Will Try Oxygen 124
New Hudson Model Parts Production Starts Soon 128
WAA Reports on Reconversion of Plants 134
Instrument Society Elects Officers 136
Machine Tool Developments 138
Nonferrous Market News and Prices 140-41
Iron and Steel Scrap News and Prices 143-44
Comparison of Prices by Week and Year 145
Finished and Semifinished Steel Prices 146
Alloy Steel Prices 147
Warehouse Steel and Pig Iron Prices 149
Ferroalloy Prices 150

○ ○ ○

Index to Advertisers 213-214

THOMAS L. KANE
Publisher

○ ○ ○

R. M. GIBBS
Business Manager

○ ○ ○

B. H. HAYES
Production Manager

C. E. ELLIS
Promotion Manager

O. L. JOHNSON
Manager Market Research

○ ○ ○

CHARLES T. POST
Manager Circulation and Reader Service

○ ○ ○

Executive Offices
Chestnut and 56th Sts.
Philadelphia 39, Pa., U.S.A.
Editorial and Advertising Offices
100 E. 42nd St., New York 17, N.Y., U.S.A.

○ ○ ○

Regional Business Managers

FRED BANNISTER
W. Hartford 7, Conn.
62 La Salle Road

ROBERT F. BLAIR
Cleveland 14
1016 Guardian Bldg.

C. H. OBER
H. E. LEONARD
New York 17
100 East 42nd St.

PEIRCE LEWIS
Detroit 2
103 Pallister Ave.

B. L. HERMAN
Philadelphia 39
Chilton Bldg.

STANLEY J. SMITH
Chicago 3
1134 Otis Bldg.

JOHN M. HUGGETT
Pittsburgh 22
814 Park Bldg.

R. RAYMOND KAY
Los Angeles 28
2420 Cheremoya Ave.

○ ○ ○

Owned and Published by
CHILTON COMPANY
(Incorporated)

OFFICERS AND DIRECTORS
JOS. S. HILDRETH, *President*
EVERIT B. TERHUNE Vice-President
P. M. FAHRENDORF Vice-President
JULIAN CHASE Vice-President
THOMAS L. KANE Vice-President
G. C. BUZBY Vice-President
CHARLES J. HEALE Vice-President
JOHN BLAIR MOFFETT, Secretary
HARRY V. DUFFY T. W. LIPPERT
FRED V. COLE

○ ○ ○

WILLIAM H. VALLAR, Asst. Treas.

○ ○ ○

Chilton Editorial Board
PAUL WOOTON
Washington Representative

○ ○ ○

Member, Audit Bureau of Circulation

Member, Associated Business Papers

○ ○ ○

Indexed in the Industrial Arts Index. Published every Thursday. Subscription Price United States, its Territories and Canada $8; other Western Hemisphere Countries $15; Foreign Countries $20 per year. Single copy, 35¢. Annual Review Number, $2.00.

○ ○ ○

Cable Address, "Ironage" N. Y.

○ ○ ○

Copyright, 1947, by Chilton Company (Inc.)

HOW TO GET . . . .

Exact Mechanical Properties in Alloy Steel from Stock

Most steel buyers are accustomed to specifying alloys on the basis of analysis alone. But there's a better, surer way of buying that's gaining more followers daily—specification of Ryerson alloys by analysis *and* minimum hardenability requirement. Either one alone isn't enough. Together they give double assurance that your steel will measure up to performance demands.

You can order this way from Ryerson because we test every heat of annealed and as-rolled alloy in stock. Establish the heat treatment response for every shipment by end-quench hardenability tests. Then, when you specify the mechanical properties you must have after heat treating, we select bars that, on the basis of actual tests, will do the job.

This system of purchasing can effect important savings for your company. It protects against expensive product failure and practically eliminates the possible necessity of replacing unsuitable material. Ryerson assures delivery of alloy steel that will amply meet your minimum hardenability requirements.

And to prove that you can get the desired performance, we send a Ryerson Alloy Report with every shipment. Charted test results and mechanical properties interpreted from them confirm the steel's hardenability and guide you in obtaining the desired heat treatment results.

Hardenability is nothing new with Ryerson. It's been a Ryerson service for ten years now. If you have yet to order on this basis why not investigate the advantages? Thousands of tons of tested Ryerson alloys are awaiting your call.

JOSEPH T. RYERSON & SON, INC.

Plants at: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles

RYERSON STEEL

IRON AGE
100 E. 42nd ST., NEW YORK 17, N. Y.

ESTABLISHED 1855

o o o

October 2, 1947

o o o

THOMAS L. KANE
Publisher

o o o

T. W. LIPPERT
Directing Editor

Editorial Staff
News, Markets Editor.T. C. CAMPBELL
Technical Editor........W. A. PHAIR
Metallurgical Editor...E. S. KOPECKI
Machinery Editor ....T. E. LLOYD
Art Editor ....F. J. WINTERS
Associate Editor........J. R. HIGHT
Associate Editor...H. W. VAN CAMP
Associate Editor.....E. L. SCHIMKO
Editorial Ass't......A. D. STOUT, JR.

o o o

Foreign Editors
England (Contrib.)....F. H. HARLEY
49 Wellington St., Strand, London, W. C. 2, England
Canada (Contrib.)...F. SANDERSON
330 Bay St., Toronto, Canada
Paris (Contrib.)......PIERRE BENOIT
59 Rue Manin, Paris XIX, France

Regional News and Technical Editors
G. F. SULLIVAN
Pittsburgh 22
814 Park Bldg.

D. I. BROWN
Chicago 3
1134 Otis Bldg.

JOHN ANTHONY
Philadelphia 39
Chilton Bldg.

EUGENE J. HARDY
KARL RANNELLS
GEORGE H. BAKER
Washington 4
National Press Bldg.

W. A. LLOYD
Cleveland 14
1016 Guardian Bldg.

W. G. PATTON
Detroit 2
103 Pallister Ave.

OSGOOD MURDOCK
ROBERT T. REINHARDT
1365 Market St., San Francisco 3

R. RAYMOND KAY
Los Angeles 28
2420 Cheremoya Ave.

Editorial Correspondents
ROBERT McINTOSH
Cincinnati

L. C. DEAN
Buffalo

G. FRAZAR
Boston

HUGH SHARP
Milwaukee

JOHN C. McCUNE
Birmingham

ROY EDMONDS
St. Louis

JAMES DOUGLAS
Seattle

The Despised Shopping List

THE ominous accumulation of distress reports from Europe and the related (but only slightly so) gyrations in prices within the domestic economy tend to overshadow even such dramatic fireworks as the Vishinsky tirades in the UN. There seems to be rather common agreement that the western rump of Europe is on the brink of catastrophe. Also, there is apparent agreement that the American pocketbook is being squeezed by inflated prices more unmercifully than at any time within the memory of the present generation. Agreement also exists that hard work is one major weapon to conquer both foreign and domestic economic distortions.

Coupled with all this agreement, there is surprising disagreement and apathy toward a special session of Congress. This general unwillingness of either political party to get back to work, each for peculiar political reasons of its own, is all the more strange considering the constant political exhortations for more efficient application of labor and management to their respective jobs. There are also ready criticisms abroad about the lack of "rhythm of pick and shovel." The political mind, at least, appears to differentiate between the work to be performed by human muscle and the policy making, decisions and leadership which by law are the special functions of Congress. Or, at least it seems so, with Mr. Marshall practically pleading for a special session and crying of the threat of "intolerable cold and hunger in Europe," and the American people sullen and disturbed by the stalking specter of inflation.

As for the Marshall plan to get Europe on its economic feet within four years, there is no denying that on Sept. 9 the sixteen nations involved produced a bill of particulars of rather formidable proportions. Under great last-minute pressure from Mr. Clayton the net trade deficit for the next four years (*vis à vis* the United States) was scaled down from $29.2 billion to $20.6 billion, the greatest need being in 1948 ($7.6 billion) and tapering to $3.6 billion in 1951. Agricultural products account for 85 pct of the entire deficit, which underlines the recent speculative activity in the Chicago grain pits. Coal, oil and steel account for the bulk of the remaining 15 pct.

Such are the bare bones of what the British with some chagrin call the despised shopping list. Almost one-third will go to the British, with the bulk of the remainder earmarked for France and Germany. This represents a total draft on each American family of some $500 for the four years.

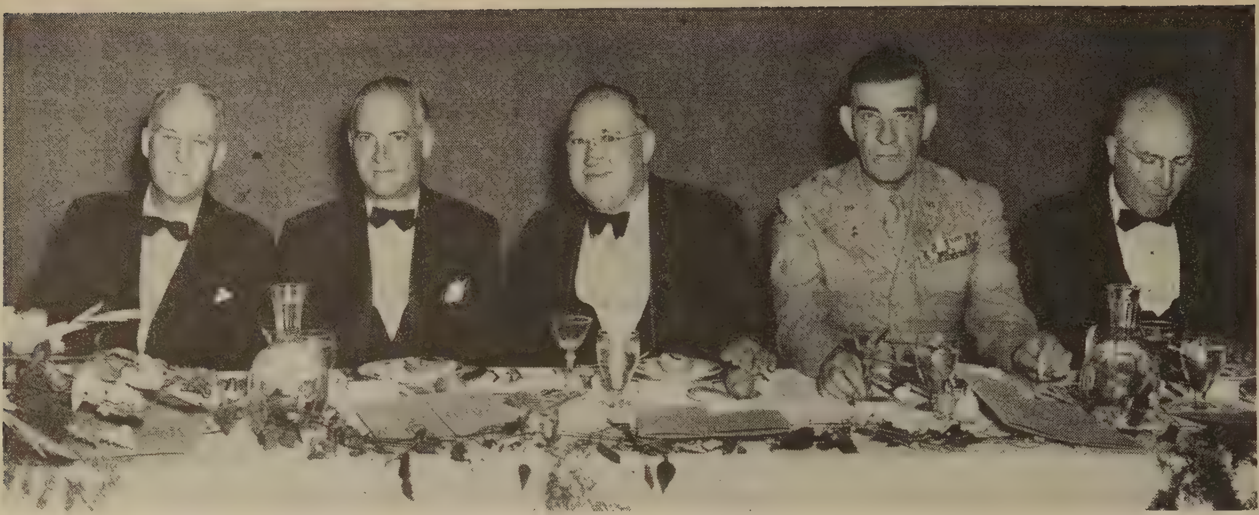
The British pressed hard for a Western European Customs Union, and the Americans repeatedly prodded for dramatic concrete evidence of willingness to work together, to make mutual sacrifices, for assurances of financial rehabilitation and thrifty governmental housekeeping.

Perhaps it was unrealistic to expect so much of nations beat up by two wars, discouraged by immediate distressing problems, and so frightened by the grinding millstones of Communist Russia and Capitalistic United States.

With American help, Western Europe envisages an industrial recovery proportionally equivalent to that occurring in the American economy during the war years. This seems over-optimistic, but even partial achievement would strengthen the whole world's economy, would banish the hunger and destitution now stalking the land and would bolster the military security of the United States.

The salvos of criticism and dissent in this country will be loud and widespread. But, the country is facing its Munich, and intelligent self-interest rules against retreat at this late date. And during the critical four years, the United States could as an example set itself energetically to the task of conquering its own monetary instability, labor unrest and high cost of living.

T. W. Lippert



NOTABLES attending the machine tool show preview dinner included (left to right) Herbert H. Pease, NMTBA president and president, New Britain Machine Co.; Dwight H. Green, Governor of Illinois; George Habricht, president American Machine Tool Distributors' Assn.; Maj. Gen. E. S. Hughes, chief of Ordnance, U. S. Army, and Lloyd D. McDonald, NMTBA second vice-president, and vice-president, Warner & Swasey Co.

1947
MACHINE
CHICAGO
SEPT 17-26
TOOL
SHOW

The 1947 Machine Tool Show

By T. E. LLOYD
Machinery Editor,
The Iron Age

WHEN the blatting signal horns of the sprawling Dodge-Chicago plant sounded the final closing, last Friday, of the 1947 machine tool show some 180,000 industrial executives, engineers, foremen and other plant employees, together with about 1100 overseas visitors, had had the opportunity of inspecting one of the most outstanding displays of American engineering skill and ingenuity ever to be blanketed by a single roof.

Startling, even to the most hardened industrial exhibit visitor, was the tremendous size, scope and intensity of the 1947 machine tool exhibit. That the show was a success far beyond the most optimistic hopes of its sponsors is indicated by the registered attendance of 180,000, as compared with pre-show estimates of a potential 100,000 visitors.

The variety and newness of the equipment on exhibition make it difficult, in the alloted space, to give an adequate description of the show to those who were not able to attend. However, after living for 10 days in the noisy but always interesting aisles of the show, this observer finds several especially distinct impressions standing out. One lasting impression is that the machine tool industry entered this show in deadly earnestness. Not only in the new equipment unveiled for the first time was this indicated, but also in the setup of the exhibits, in the stress on operating units so that claims could be substantiated. The industry, in its pre-show statements, promised that machines of new and startling productivity would be shown. They were!

Another impression was the overwhelming trend to automaticity, the fully automatic cycle, one of the few avenues still open to industry for reducing its production costs. A third impression was that the full potentialities of cemented carbides were now available to machine tool users. Vibration absorbers, heavier motors and heavier construction and higher speeds were everywhere in the picture. Of especial significance was the widespread use of the slogan "powered for carbides."

The amazing productivity of these new machines gave rise on numerous occasions to the speculation that perhaps the machine tool designer had now reached the point where further increases in productivity must await the perfection of new techniques of part handling and of chip disposal. With planers taking ⅛ in. cuts and 35 sfpm and millers gouging out stock at 800 sfpm, the problem of chip disposal is indeed a serious matter.

This point was aptly put by Myron Curtis, assistant director of engineering, Warner & Swasey Co., in a talk before a joint session of ASTE and AFA. Mr. Curtis wondered if "somewhere along the line . . . there is a limit to the practical speed at which metal can be cut. Beyond that point it is much more important to pay attention to decreasing handling time than to increasing cutting speed."

Another significant aspect of the show was the international character of the attendance. Turbaned visitors from India, uniformed representatives of China and a dozen other nations were everywhere in evidence and obviously tremendously impressed by what they saw. More than 1100 overseas visitors were registered, representing 35 nations of the world. Speculation that perhaps this show may replace some of the famed European machinery exhibits is not too far fetched indeed, after the experience of these past two weeks.

The largest overseas representations came from England, France and Argentina. The highlight of the National Machine Tool Builders' Assn.'s social activities was the Overseas Dinner at the Palmer House on Sept. 23. Brooks Emeny, president of the Foreign Policy Assn., was the guest speaker and he spoke on the "Tools of Reconstruction."

His talk outlined the facts as they exist today in international relationships, the forces at work in world relationships, and the dilemmas of world statesmanship brought about by the forces of science and want throughout the world. He cited the need for the United States to take a realistic and forward position in world affairs, and stressed the consequences for any potential isolationistic tendency. He pointed out the importance of using the tools of war as tools of peace to alleviate the want and suffering in what he termed the "vacuum areas" or destitute areas of the world. However, his warning was that "the present possession by the United States of an overwhelming proportion of the instruments of power comes at a time when decisions of the moment will set the pattern of the future."

The position of the machine tool industry of the United States in world markets as well as domestic markets is enviable. The demand for such equipment throughout the world is acute. In Europe the task of reconversion has hardly started, and European industry, with its need for machine tools, is basic to reconstruction. W. L. Dolle, president of Lodge & Shipley Machine Tool Co., Cincinnati, pointed out that a large part of the reconstruction of Europe will have to be played by American-built machine tools. Despite the fact that the British machine tool capacity is larger than before the war, the German machine tool industry, upon which the Continent largely depended, no longer fulfills its function.

Likewise, he reiterated the fact that there is a broad industrial awakening in South America, India, South Africa and Australia. In these areas there is a desire to employ production techniques proved in America.

The machine tool show, in addition to the exhibit itself, included a series of meetings by other technical organizations. Following the Preview Dinner on the evening of Sept. 16, at which H. W. Prentis, Jr., president of Armstrong Cork Co., Lancaster, Pa., spoke on "The Tools of a Free Society," there were meetings of the American Machine Tool Distributors' Assn., the American Society of Mechanical Engineers, the American Society of Tool Engineers, the American Foundrymen's Assn., the National Electrical Manufacturers Assn., the Chicago Technical Societies Council, and the Society of Automotive Engineers. The meetings of these organizations were held at various times during the 10 day period.

In addition to the obvious value of the show to executives and engineers in acquainting them with the very newest in machine tool design and productivity, the high percentage of exhibits with full scale operating units presented an unusual educational opportunity for plant supervisory employees which was fully taken advantage of by many companies. For example, the Toledo Foreman's Club attended in a group on Saturday, requiring a special train to accommodate the 500 foremen, all from plants in the Toledo area.

All in all, the 1947 machine tool show represented a remarkable occasion. It more than lived up to its sponsor's promise. Time spent at the show was time profitably spent, and the handling of the show, considering its size, was particularly efficient. The machine tool industry has earned a well deserved rest, but it is doubtful if the buying interest indicated at the show will permit any builder to relax for some time to come.

A description of the exhibits at the machine tool show, and illustrations of many of the new machine tools on exhibit, are shown beginning on p. 64.—Ed.

THE international atmosphere that marked the machine tool show is typified by Gurbachan Singh, supply officer of the Government of India. Mr. Singh is shown here conferring with F. J. Fields, vice-president and general manager, Sidney Machine Tool Co., and H. Czerwonki, Washington representative of the company.

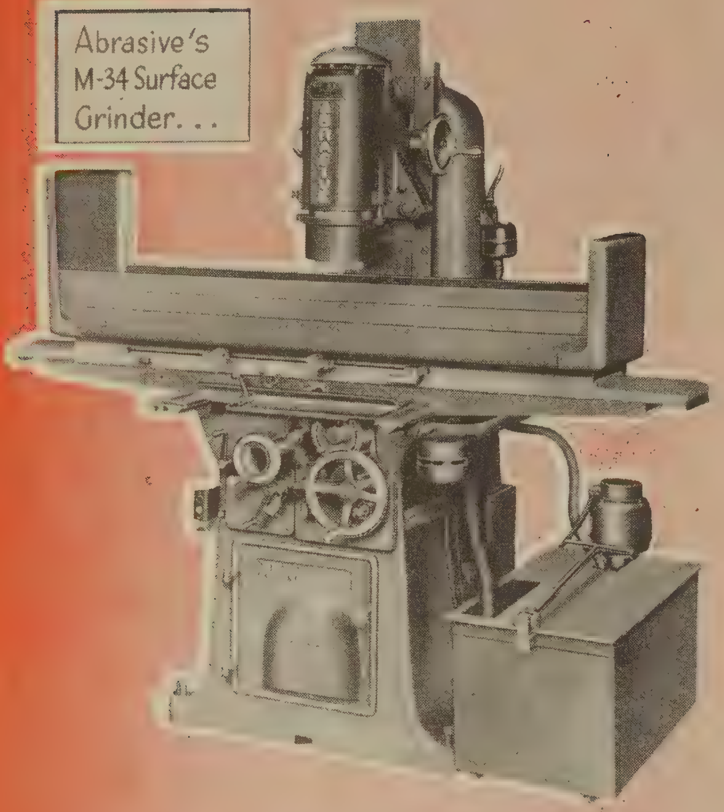
Preview Dinner Highlights Opening of Tool Show

• • • The opening of the machine tool show was marked by a preview day banquet, shown here, at the Stevens Hotel on Sept. 16. The dinner was attended by some 500 executives and engineers, who heard H. W. Prentis, Jr., president, Armstrong Cork Co., speak on "The Tools of a Free Society." Maj. Gen. E. S. Hughes, Chief of Ordnance, U.S. Army, also spoke. Herbert H. Pease, NMTBA president, served as toastmaster.

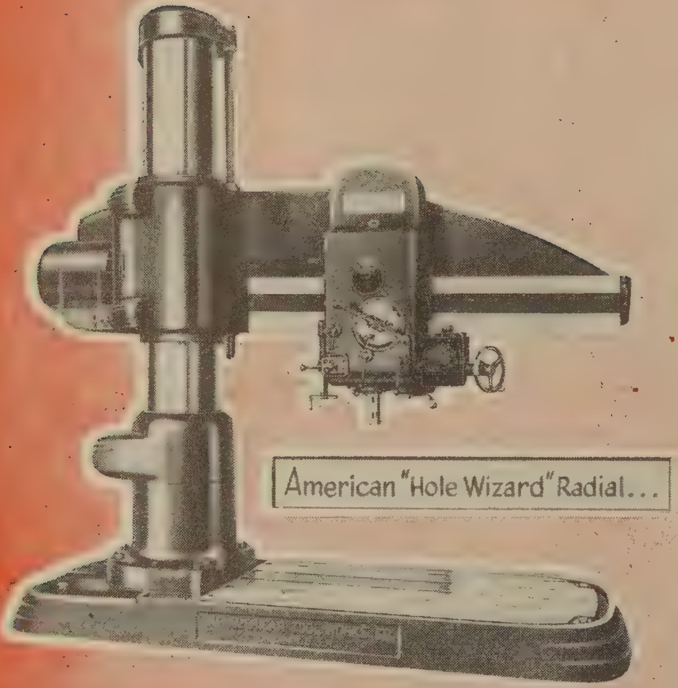
Overseas Visitors Honored at Banquet

• • • One of the highlights of the machine tool show was the banquet in honor of overseas visitors held at the Palmer House Sept. 23. The guests, numbering approximately 600, were greeted by Charles J. Stilwell, who served as toastmaster, and by Herbert H. Pease, president of the National Machine Tool Builders' Assn. The principal speaker of the evening was Brooks Emeny, president, Foreign Policy Assn. Dr. Emeny's talk, "Tools of Reconstruction," explored the development of American foreign policy.

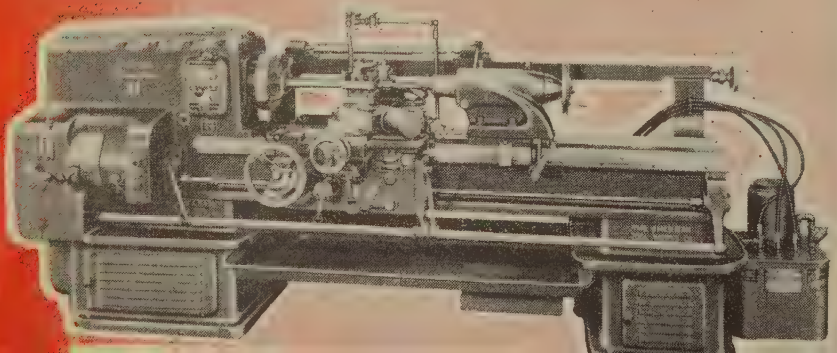
The 1947 Machine



Abrasive's M-34 Surface Grinder. . .



American "Hole Wizard" Radial. . .



FOR the information of readers unable to attend the machine tool show held in Chicago, Sept. 17-26, a description of the various exhibits is presented herewith. While space limitations prevent a detailed description of each exhibit, the highlights of each booth are given and some of the new and interesting equipment is illustrated. Additional information on the equipment mentioned here may be obtained by writing THE IRON AGE or the specific manufacturers.

Abrasive Machine Tool Co., East Providence, R. I. — The M-34 surface grinder (illustrated) was featured at this exhibit along with the company's No. 5 Multi-Micro finishing machine. A tool and cutter grinder was shown, along with a grinder designed for use on a graduating machine for calibrating wheels and dials. The M-34 grinder has a vertical spindle and segment type wheel. The design of the machine provides more power at the cutting point, minimizes vibration, and requires no belting.

Acme Equipment Co., Inc., Chicago — A foot-powered squaring shear for light gage sheet and an air-operated squaring shear for sheet metal running 16 gage and heavier were shown by this company. Both of these machines are of new design.

Acme Industrial Co., Chicago — A line of accessories was shown that included drill-jig bushings, dowel pins, screw machine reamers, limit gages, plug and ring gages, mechanical seals, valves, pumps, motors, and examples of precision grinding and flat and cylindrical lapping.

Ahlberg Bearing Co., Chicago — This company's complete line of bearing products was exhibited, including precision ball bearings, tapered and cylindrical roller bearings, and ball bearing pillow blocks. A part of the display showed how internal self-aligning bearings compensate for shaft misalignment.

Aircraft-Marine Products, Inc., Har-

Tool Show in Review

risburg, Pa. — Accessory equipment for electrical wiring, including solderless pressure connectors, wire terminators, and various wiring devices, was shown.

Ajax Mfg. Co., Cleveland — Forgings, the 5-6 Ajax high speed forging press and a new air clutch operated 2-in. forging machine were shown. The latter, a 500 ton press, can be operated at 90 strokes per min. The air clutch is mounted on the press eccentric and is connected with the brake, giving faster operation than when mounted on the back-shaft.

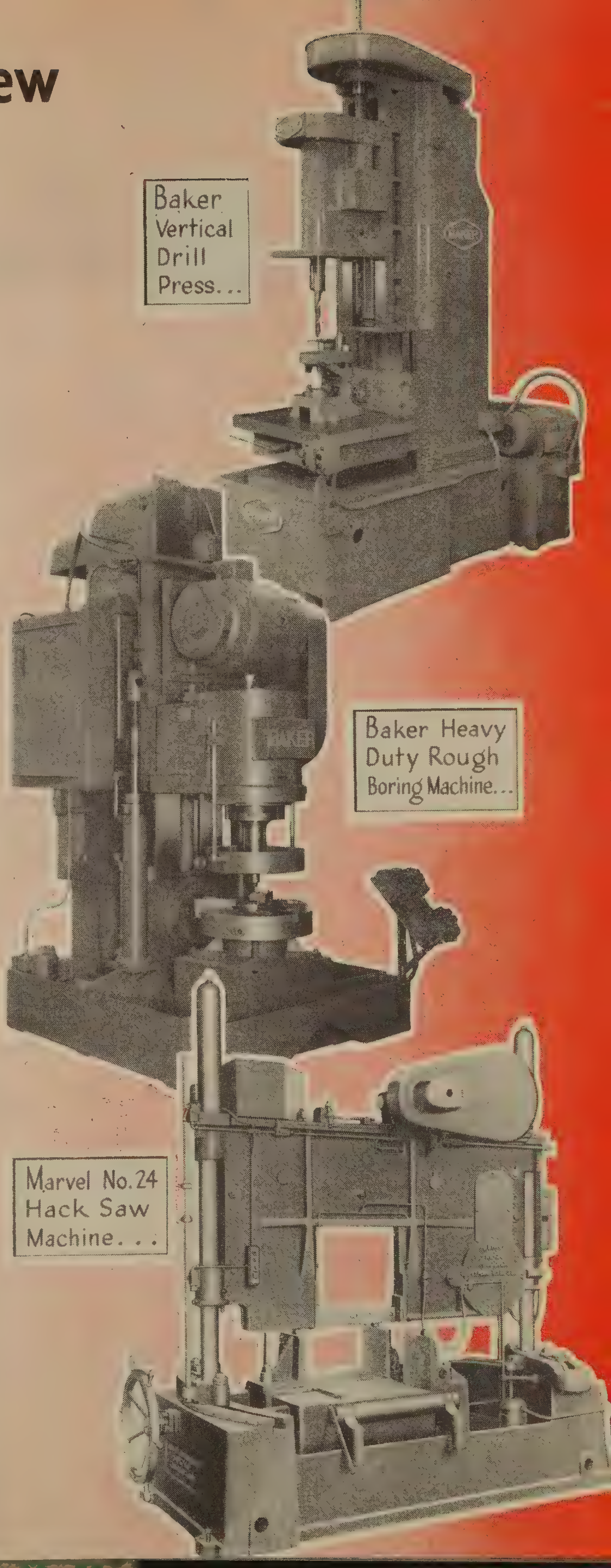
Allegheny-Ludlum Steel Corp., Pittsburgh — Carmet, A-L's carbide line, tool and high-speed steels, stainless steels and electrical steels were shown. Tools made from these products were exhibited.

Allen-Bradley Co., Milwaukee — Machine tool motor controls, including ac and dc contactors, relays, starters, switches and other accessories, were shown. A dc control panel for the control of a horizontal boring, drilling, and milling machine was included.

Louis Allis Co., Milwaukee — "Adjusto-Spede" variable-speed motor drives, ac and dc motors, shaftless motors, brake motors, and rapid reversing motors with gear reducers were featured.

American Broach & Machine Co., Ann Arbor, Mich. (Division of Sundstrand Machine Tool Co., Rockford, Ill.) — This display consisted of a line of broaching machines, including a vertical internal pull-up broaching machine, a universal three-way, a horizontal, a single ram surface, and a three-way broaching machine. Also shown were a vertical press and a complete assortment of broaches, a panel of broached parts, broach pull and push heads, and an assortment of broaching tools.

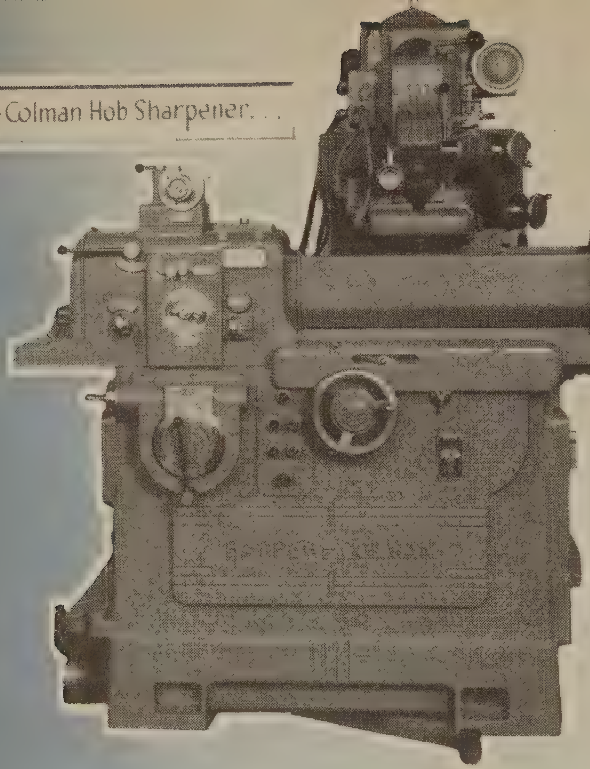
American Machine & Foundry Co., Wahlstrom Tool Div., Brooklyn — Featured at this exhibit was a line of self-centering automatic drill chucks and tapping attachments. These attachments were demonstrated to show the time saving possible from their use.



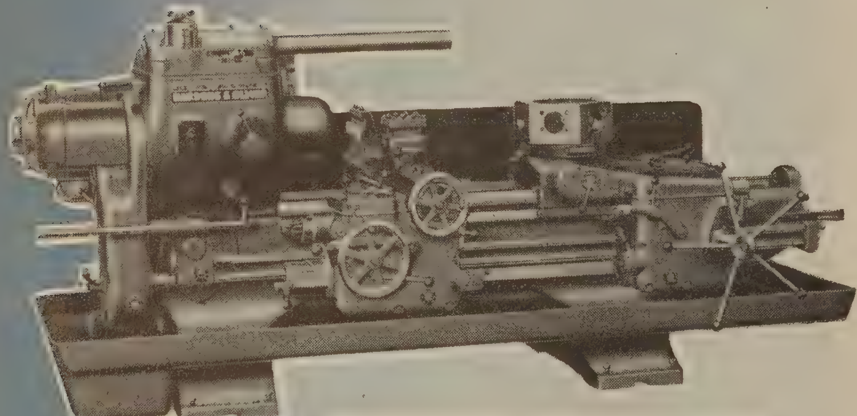
Baker Vertical Drill Press...

Baker Heavy Duty Rough Boring Machine...

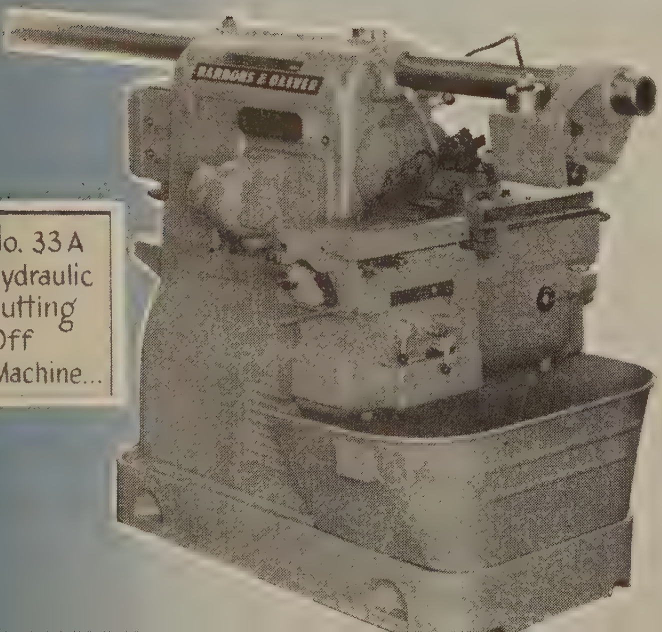
Marvel No. 24 Hack Saw Machine...



Barber-Colman Hob Sharpener...



No. 22 Saddle Type Turret Lathe...



No. 33 A Hydraulic Cutting Off Machine...

American Tool Works Co., Cincinnati — The improved "Hole Wizard," a radial drill (illustrated) with automatic oiling mechanism to oil the elevating and safety nut each time the arm is moved, was shown. Also shown were American's new 25 and 18-in. Pacemaker lathes and a new hydraulic shaft duplicating lathe (illustrated). The 25-in. lathe has a multiple disk starting clutch and three heads with speed ranges of: 27 speed, 6 to 600 rpm; 18 speed, 7 to 700 rpm; and 9 speed, 6 to 750 rpm. The latter speed is with a 2 to 1 adjustable dc motor, while the first two are with constant speed motors. The American hydraulic shaft-duplicating lathe, built in 16, 18, 20, 25 and 32 in. sizes, eliminates multiple tool setups and reproduces circular shafts from a template. One hydraulic system controls the machine. The 18-in. Pacemaker is a new addition to the company's line, basically designed for use of carbide cuttings tools. Three optional speed ranges provide 18 or 27 spindle speeds in geometrical progression with suitable speeds for all classes of lathe operation from large boring to high speed turning.

Ampco Metal, Inc., Milwaukee — Sand and centrifugal castings, extruded and hollow bars and shapes, welding electrodes and resistance welding tips and wheels, continuous cast rod and tubing, and various nonferrous parts were shown.

Anchor Coupling Co., Inc., Libertyville, Ill. — High, medium and low-pressure hydraulic hose assemblies, couplings, straight and angle adapter union and fittings, emergency clamp and field service couplings, and similar related products were shown.

Anderson Bros. Mfg. Co., Rockford, Ill. — A traveling ram type straightening press, a hydraulic straightening press, a hydraulic hand press, a power scraper with turntable, improved balancing ways, pillow block type of balancing way, and hand scrapers with carboloy tipped blades were featured by this company.

F. E. Anderson Oil Co., Portland, Conn. — Part of its line of Lusol metalworking oils, cutting oils, Rustavoid metal preservatives and rust preventives, cleaners and carbon removers, oil and grease solvents, and cleaners for removing buffing compounds were displayed.

Anker-Holth Mfg. Co., Port Huron, Mich. — An operating display of air cylinders and two and three-jaw chucks for lathes and a line of hand and foot valves were displayed.

Apex Tool & Cutter Co., Inc., Shelton, Conn. — Tool holders and bits, tool posts, boring bars, and inserted tooth milling cutters made by this company were displayed. Also shown were carbide, Stellite, Rexalloy and other metals used for machining, tools and holders for lathes, planers, shapers, slotters, and other multiple and single point machine accessories.

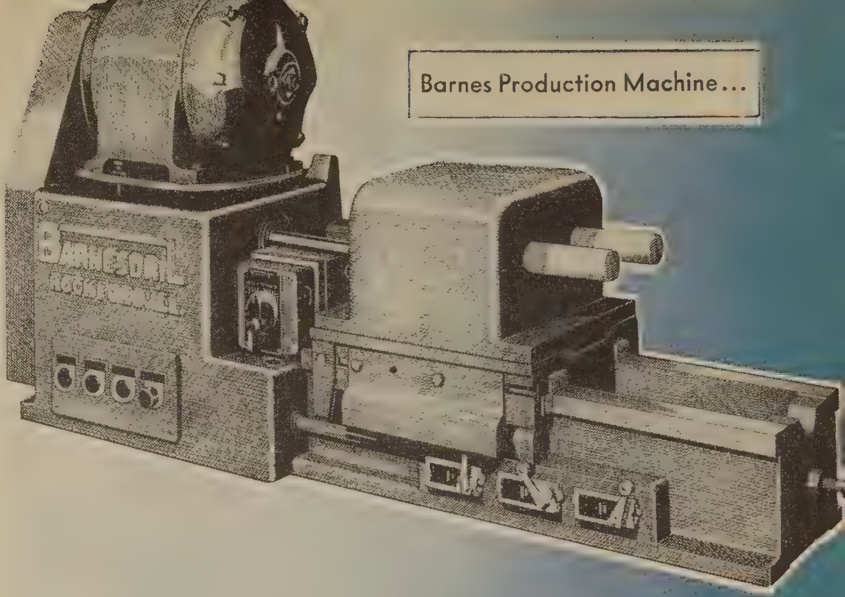
Armstrong-Blum Mfg. Co., Chicago — The new Marvel hydraulic band sawing machine, capable of cutting steel billets up to 15x15 in. and having a newly developed torque control valve that adjusts feed pressure, was shown. The world's largest reciprocating hack sawing machine (illustrated), capable of handling stock up to 24x24 in., was on display cutting forging die blocks. It employs a blade 36 in. long by 4½ in. wide and ⅛ in. thick. The No. 18 Marvel "Roll-Stroke" hack sawing machine demonstrated its adaptation to sawing problems of steel structural shops and warehouses.

Armstrong Bros. Tool Co., Chicago — Displayed at the show was this company's line of tool holders, turret lathe and screw machine tools, bits, blades, cutters, lathe and milling machine dogs, C clamps, ratchet drills, drilling posts, open end and socket wrenches, pipe tools, and machine shop specialties.

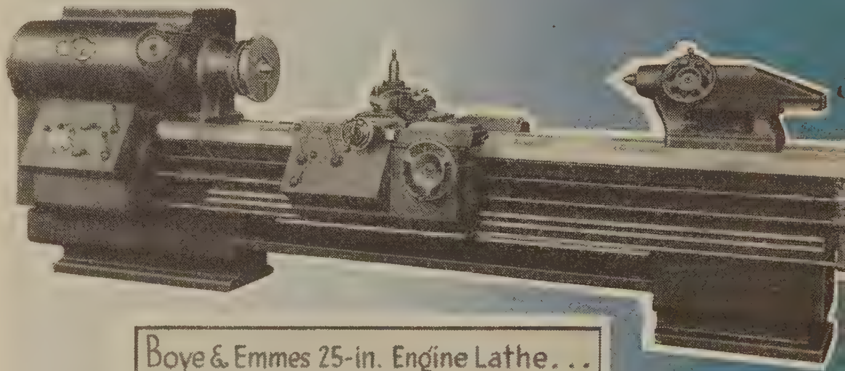
Arrow Hart & Hegeman Electric Co., Hartford, Conn. — Magnetic type starters, push-pull selector type control switches, disconnect switches, small switches and a complete control panel for a grinder were exhibited.

Arter Grinding Machine Co., Worcester, Mass. — Arter showed two new rotary surface grinders, models B-24 and D-12, and an automatic cylinder grinder, model 135. The surface grinders were hydraulically operated.

Automatic Transportation Co., Chicago — A line of electric fork trucks and motorized hand trucks was shown by this exhibitor. This company's trucks were made available to exhibitors in setting up and disassembling their displays. The hydraulic fork truck is made in 2000, 3000, and 4000-lb load capacities and will lift to 130 in. above the floor. Controls are identical to those of a motor car, plus a single lever under the steering wheel to control lift and tilt.

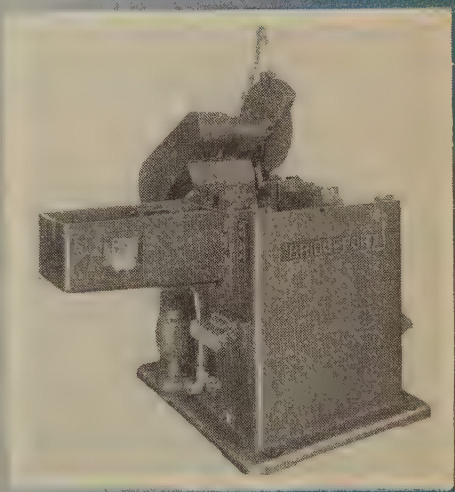


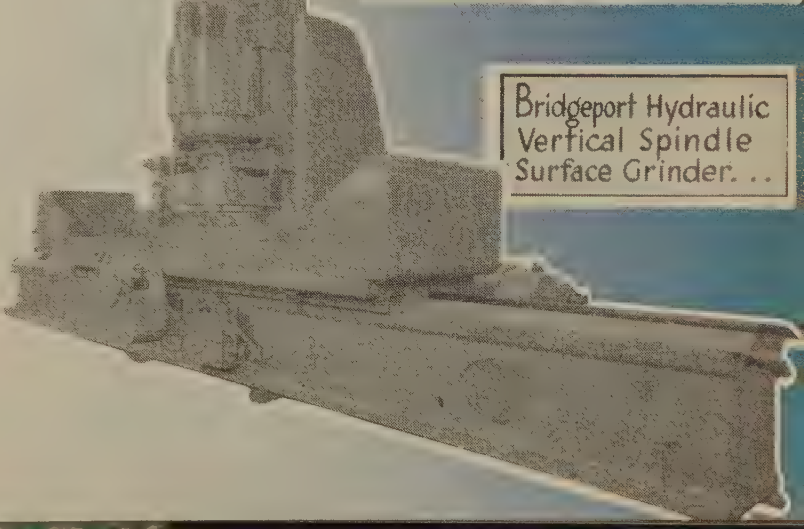
Barnes Production Machine...



Boye & Emmes 25-in. Engine Lathe...

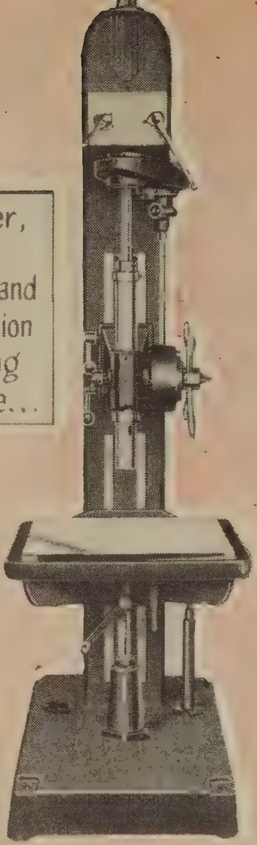
Automatic Cutting Off Machine. . .



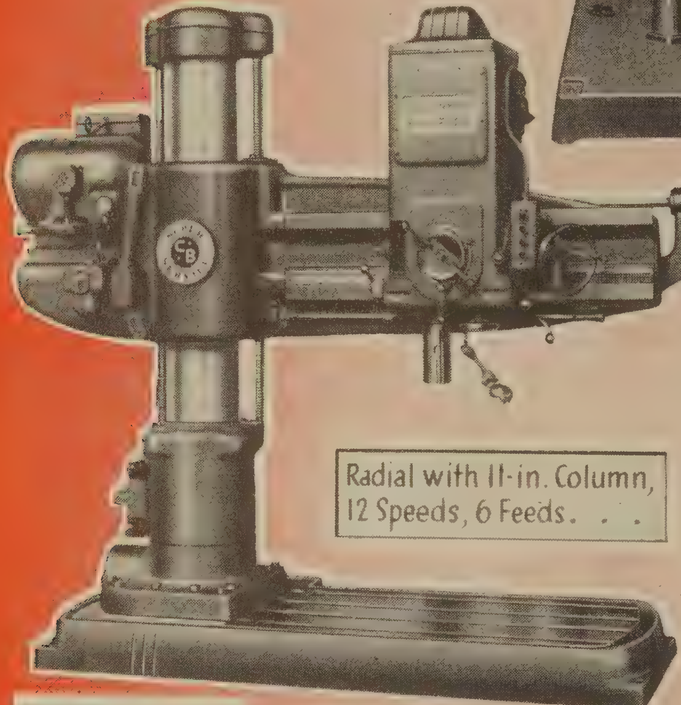


Bridgeport Hydraulic Vertical Spindle Surface Grinder. . .

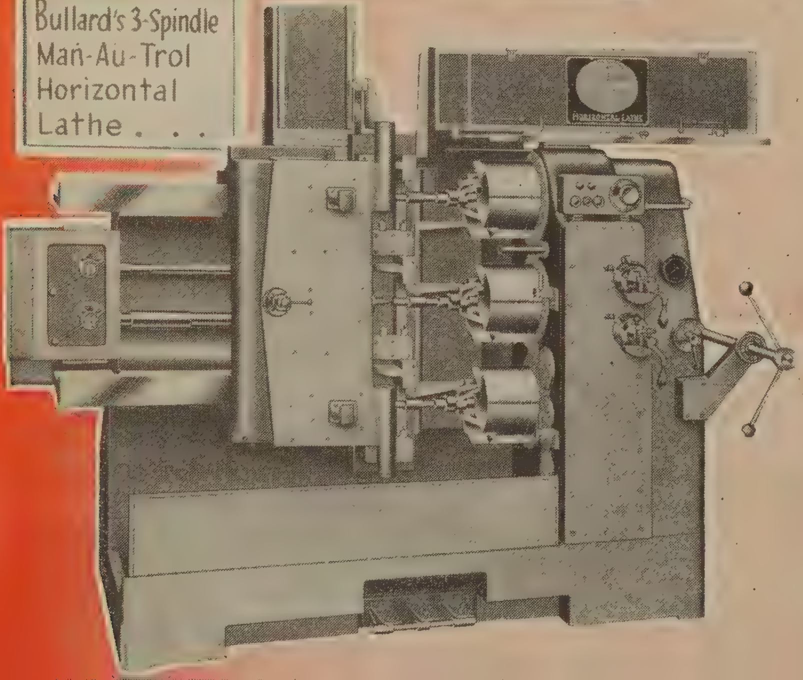
Buffalo Forge OA bender for Light Sections and Pipe . . .



RPMster, a Tool Room and Production Drilling Machine . . .



Radial with 11-in. Column, 12 Speeds, 6 Feeds . . .



Bullard's 3-Spindle Man-Au-Trol Horizontal Lathe . . .

Avey Drilling Machine Co., Cincinnati — Along with its standard upright drilling machines, Avey exhibited the No. 2 MA-6 drilling and tapping machine and the No. ½ MA-8, which has eight speeds for high speed production work. The belted-motor sensitive drill in No. 2 and No. 3 sizes incorporates a single speed motor, foot mounted, easily replaceable with six speed geared transmission and V-belt drive to the spindle. There were running exhibits of the cam feed units applied to automatic index rotating table machines, and the Aveydraulic Torquematic deep hole drilling units applicable to the company's crankshaft drilling machines.

Axelson Mfg. Co., Los Angeles — Three heavy-duty engine lathes of recent design, along with a full complement of accessories, were featured. These machines have direct connected unimount motors, a built-in reverse disk clutch, and a hydraulic disk brake. The tailstock of these lathes is a patented two-speed unit to provide needed power in heavy drilling operations without the necessity of using an auxiliary bar in the handwheel. A line of standard plug and ring gages and tool joint and line pipe gages for oil field use were also shown.

Baker Bros., Inc., Toledo — Featured at this display was the Baker model 60-HO-4 heavy-duty single spindle hydraulic feed boring machine (illustrated), arranged with a torque motor operated three jaw chuck. This machine utilizes carbide tipped cutters, and was demonstrated using a carbide tipped multiple blade cutter head. Also shown was the new model 17HO vertical type drill press (illustrated) having a separate hydraulic sump-pump unit to provide hydraulic power. Displayed also were electronic feed vertical drills of new design, hydraulic feed units, a keyseater and a contour grinder.

Balcrank, Inc., Cincinnati — Shown at this exhibit was a line of precision hand wheels, balanced cranks, compound rests and clamping levers for machine tools, and industrial lubrication equipment.

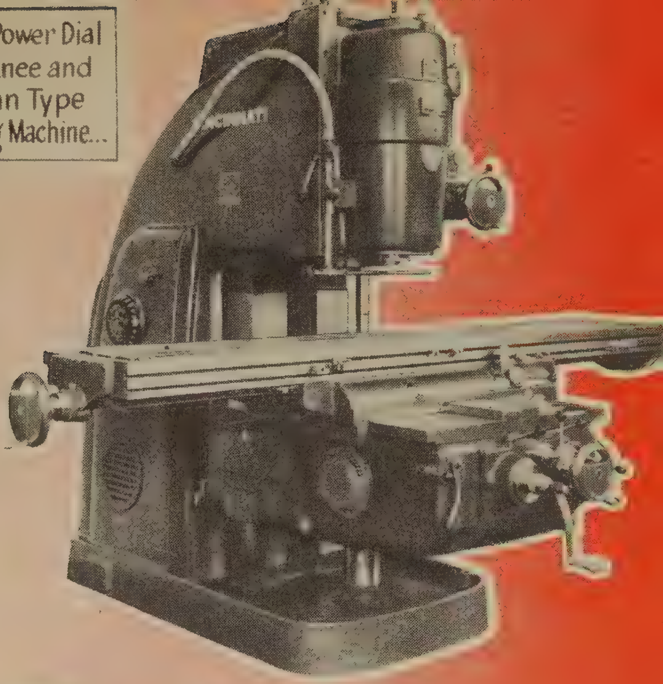
Barber-Coleman Co., Rockford — Displayed were vertical cycling production hobbing machines, horizontal cycling hobbing machines, horizontal general purpose hobbers, a hob sharpening machine, a combination hob, cutter and reamer sharpener, a diamond wheel dresser, and hobs, cutters and reamers. The type C hob sharpener (illustrated) for high speed or carbide hobs and form relief tools will hold adjacent spacing to within ten-thousandths and non-adjacent spacing as close at 0.001 in. The wet grinding feature produces a finish of 10 to 20 microinches. An index disconnect simplifies adjustments for lowering the wheel head into the gash, and pushbuttons control all motors. It will handle 6-in. diam and 5-in. lengths, and a minimum lead of 8.5471 in. with a 40° sine bar setting. Increments of feed at 3-in. diam range from 0.00015 to 0.0009 in., at 0.00015 in. steps. Index plates include 10, 12, 14, and 16 divisions, although plates are available to handle any number of gashes from 3 through 33. Spindle speeds, adjustable, include 3600, 4300 and 5000 rpm. Adjustable hydraulic table permits 5 to 20 cycles per min and length of stroke can be adjusted from 3 through 8 in.

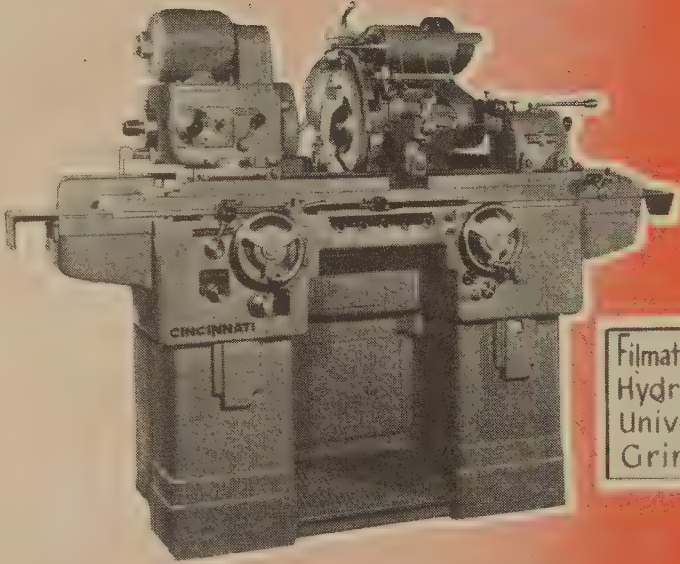
Bardons & Oliver, Inc., Cleveland — A line of lathes, some new and some with new features, was shown. Included were: No. 2 geared electric turret lathe with remote control, the smallest type of turret lathe arranged with these features. No. 5 universal turret lathe arranged for chucking work with an air chuck. No. 21B high production saddle type turret lathe arranged for bar work. No. 22B high production saddle type turret lathe (illustrated) arranged for chucking, a new machine. No. 33A hydralectric cutting off machine (illustrated), new in design. No. 43A hydralectric automatic turret lathe.

W. F. & John Barnes Co., Rockford, Ill. — This display consisted of the company's well known hydraulic drilling units, sliding head drill units, and Feedex units.

Barnes Drill Co., Rockford, Ill. — A new drilling machine featuring 12 speeds and 9 feeds selected by dial control, improved feed engagement control, and a wider range of feeds and speeds was shown. The Air-Trav hydraulic unit permits the rapid approach and return with the hydraulic feed, desirable for very high production machines. The hydraulic feature makes possible higher feed pressure. In addition on display were a special high production machine (illustrated) incorporating the company's 25 hp power hydraulic unit; a 15 hp power unit; the No. 182 hydraulic honer, a new machine for small size bores that has a 12 in. stroke and a 2 in. diam capacity. Two other honing machines, models 224 and 4014, were also displayed, the former with

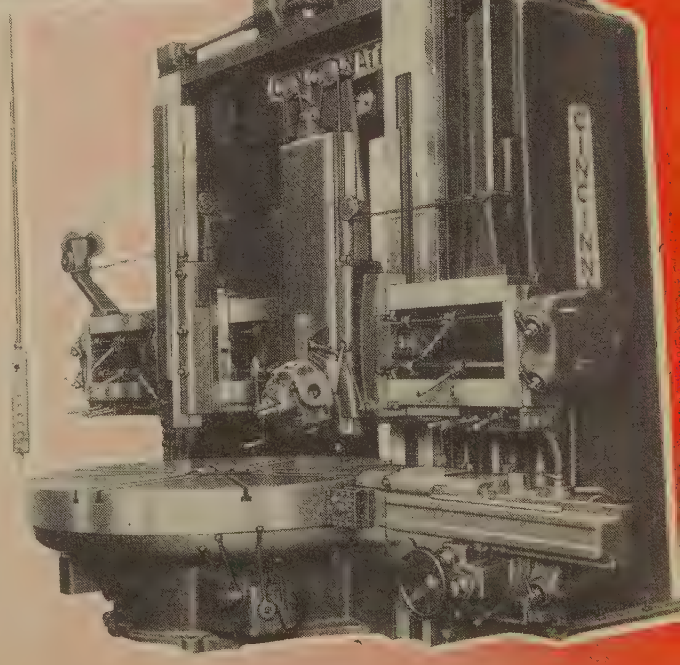
Dual Power Dial Type Knee and Column Type Milling Machine...

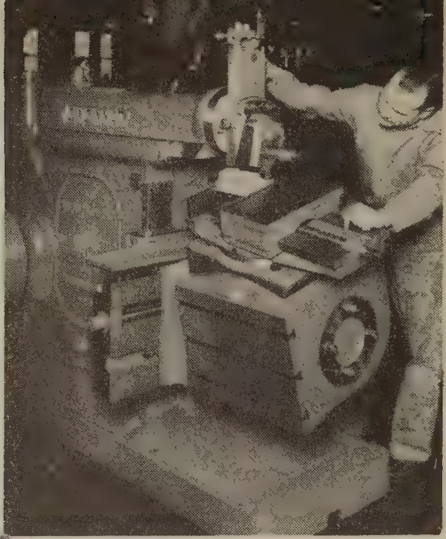




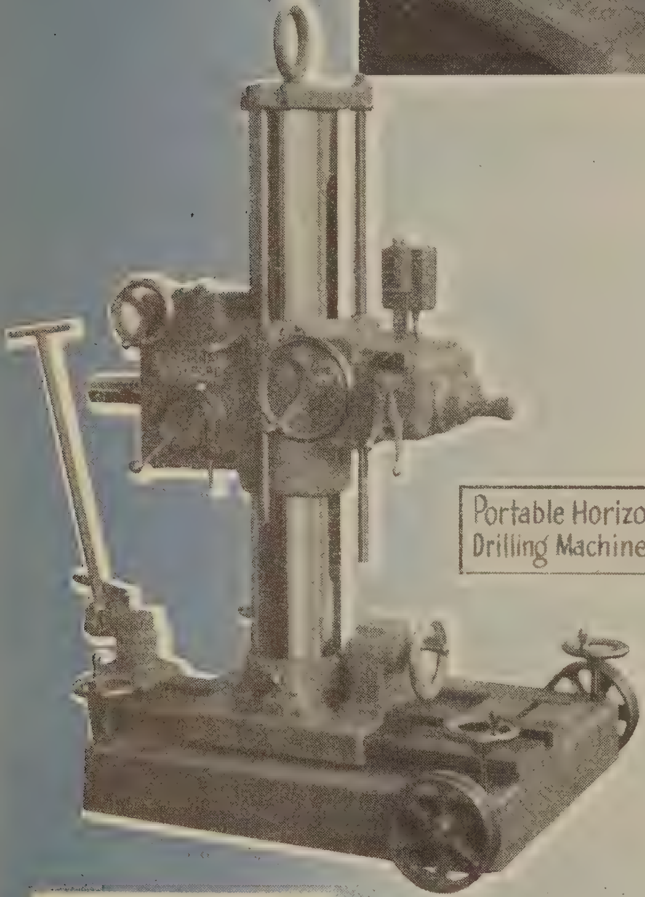
Filmatic 10 in. Hydraulic Universal Grinder...

Hypro Vertical Boring Mill

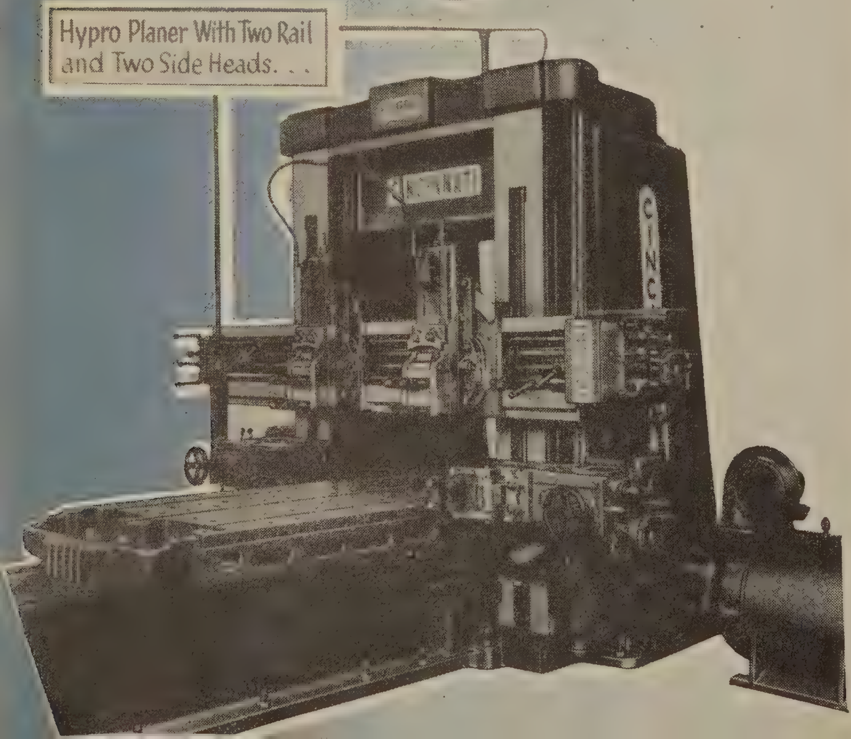




Cincinnati's New 24-in. Heavy Duty Shaper...



Portable Horizontal Drilling Machine...



Hypro Planer With Two Rail and Two Side Heads...

electronic and hydraulic controls for the machine and tool actuating mechanism, while the latter had latest features developed for processing large cylinders. The Barnesdril magnetic coolant separator, for separating metallics from coolants, was also shown in considerable detail.

Barrett-Cravens Co., Chicago — This display featured the Ox line of materials handling equipment, including the PowerOx electric lift trucks, PalletOx, and TractorOx. Also, there were other items such as a portable elevator, skids, platforms, and storage racks for boxes, barrels and drums.

Baush Machine Tool Co., Springfield, Mass. — The Baush line of multiple spindle drilling and tapping machines with hydro-pneumatic feed, hydraulic multiple spindle drilling machines, and transfer machines, each of which had horizontal units and heads and vertical hydraulic unit and head with transfer base and fixtures.

Bear Mfg. Co., Rock Island, Ill. — Four machines demonstrated the balancing of an automotive crankshaft, a fractional horsepower armature, a hammermill rotor, and a combine reel. The machines shown ranged in capacities from 5 to 2000 lb.

Charles H. Besly & Co., Chicago — Two completely new model 320 grinders grinding tapered hedge shear blades, a new model 226 30-in. grinder tooled for grinding double end drop forged mechanics' wrenches at 2400 pieces per hr, a new model 902 12-in. double vertical spindle dry grinder with rotary feed tooled for grinding small coil springs, and a new model 372 52-in. vertical spindle wet grinder with rotary feed tooled to grind cast iron gear covers at 250 pieces per hr were shown. There was also a model 218 20-in. wet double spindle grinder tooled for grinding both sides of circular saws.

Bijur Lubricating Co., Long Island City, N. Y. — This exhibit consisted of a display of a central system of automatic metered lubrication, as well as high pressure one shot and small capacity lubricators, and small capacity constant feed gear pumps. The automatic metered lubrication system was demonstrated by a large cutaway of the meter-unit, the basic component of the system.

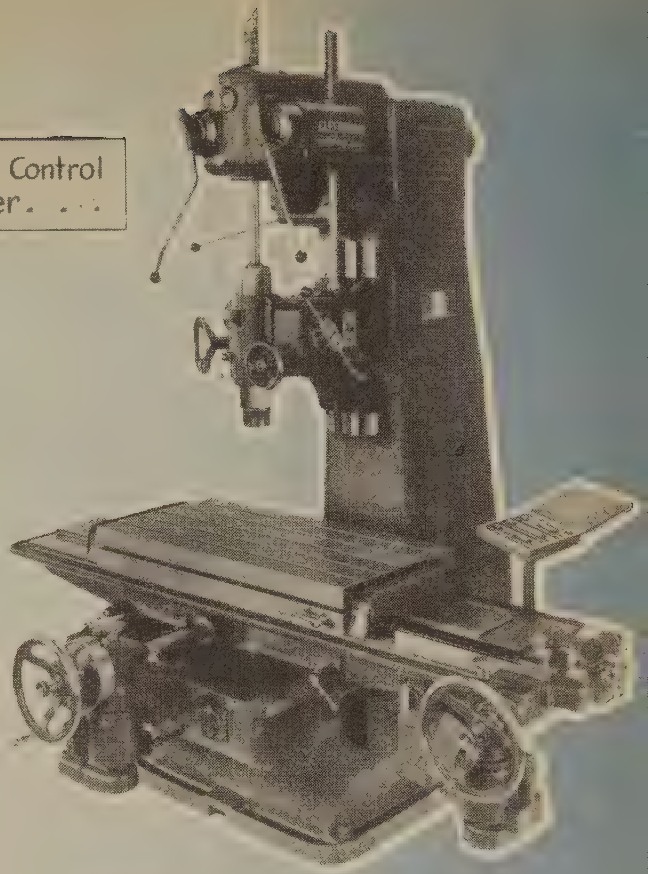
Black Drill Co., Cleveland — Two drill presses in operation showed Hard-steel drills drilling through hardened files. One machine demonstrated dry drilling and with coolant. The other machine operated under water.

Blanchard Machine Co., Cambridge, Mass. — Blanchard showed several rotary table vertical spindle surface grinders, as well as such equipment as a gap type demagnetizer, a wheel mounter, segment chucks, abrasive wheels, and an instrument for measuring the flatness of ground surfaces.

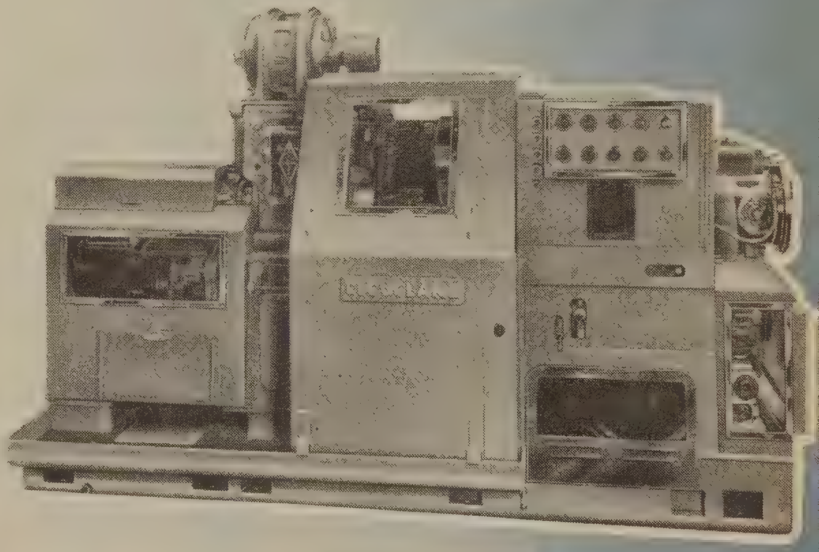
Bodine Corp., Bridgeport, Conn. — A model 40-10 drilling, tapping and screw inserting machine was tooled to produce a radio terminal component at the rate of 60 pieces per min. Formed blanks are hand fed into suitable nests in the dial. At each machine stroke, the dial is automatically indexed and locked before the spindles move toward the work. The machine countersinks a pierced hole, taps the hole 6/32 in., automatically inserts a 6/32 contact screw from a hopper, spins the end of the screw over, backs it up and ejects the completed piece. A larger machine, model 42-30, was tooled for production of a ¼-in. square steel lock spindle.

Boye & Emmes Machine Tool Co., Cincinnati — A new 25-in. lathe, known as the Boye & Emmes Golden Anniversary model (illustrated) was the feature of this display. Designed to take full advantage of carbide tooling, all gearing in the 16-speed headstock is heat treated and shaved, and the gear box is provided with 64 feed and thread changes obtained through dials. The tailstock slide is different from the conventional quill type, with extra long bearing in the base and provision for taking up wear and maintaining alignment provided.

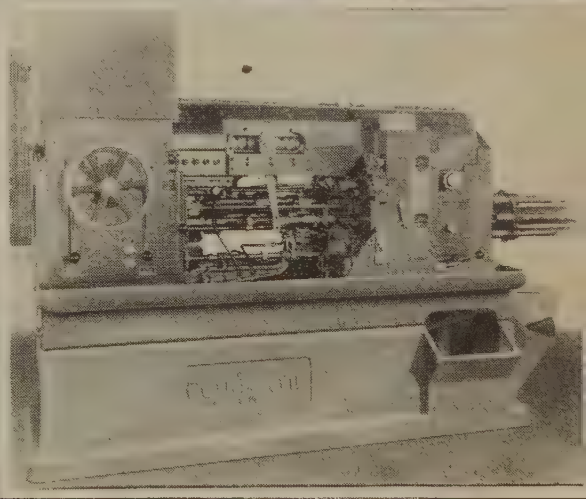
Bridgeport Safety Emery Wheel Co., Bridgeport, Conn. — A hydraulic vertical surface grinder (illustrated) with a reciprocating table 20 x 100 in., hydraulic in operation and containing several new features, was shown. The grinding head was a 26 in. Bridgeport section wheel. The head of the machine is mounted on a heavy column with square gibbed ways. Vertical movement up to 30 in. per min is possible. The table is reciprocated by two single acting hydraulic cylinders, and has a range of speeds up to 200 ft per min. The machine is made with tables from 60 to 240 in. long. A new automatic cutoff machine (illustrated) was also exhibited, capable of handling stock up to 2 in. diam and will auto-



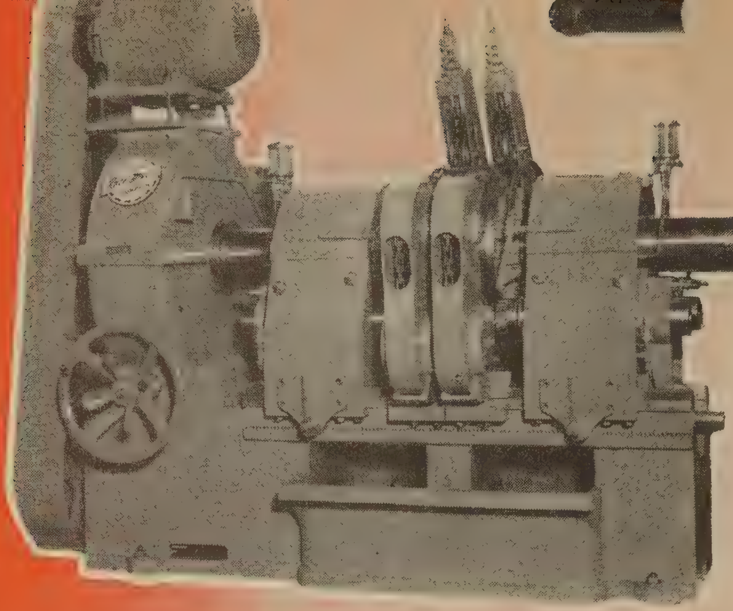
Electronic Control Jig Borer. . . .



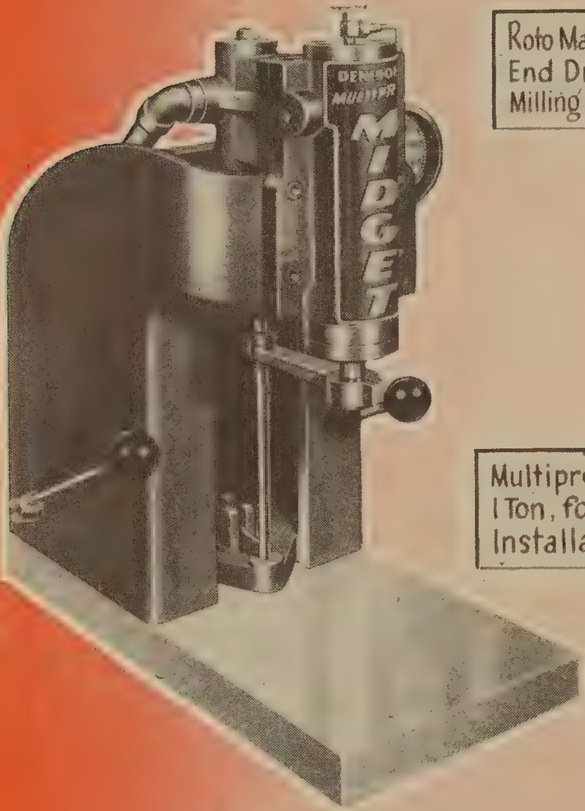
Dialmatic 2½-in. Single Spindle Automatic Turret Machine...



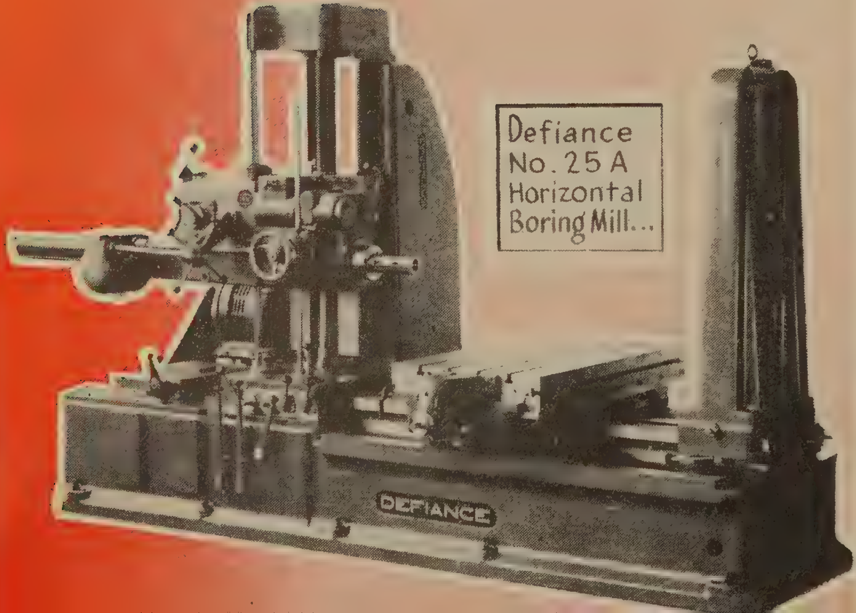
New 1-in. Six Spindle Conomatic Bar Machine...



Roto Matic Double End Drum Type Milling Machine . . .



Multipress Midget, 1 Ton, for Gang Installations. . .



Defiance No. 25 A Horizontal Boring Mill...

matically cut off stock in lengths up to 12 ft.

Bristol Co., Waterbury, Conn. — Various sizes and forms of the Bristol multiple-spline socket cap and set screw and Bristol's hex socket cap and set screws were shown. An exhibit of wire-size multiple spline socket screws was also included.

Brown & Sharpe Mfg. Co., Providence, R. I. — Displayed was a comprehensive group of this company's long line of products, including universal milling machines, plain milling machines, a vertical milling machine, automatic screw machine, a screw threading machine, a pinion turning machine, and various types of grinding machines. Attachments for milling, grinding and screw machines were exhibited along with screw machine tools, machinists' tools, cutters and hobs, arbors, gages, magnetic chucks, vises, pumps, and various electronic gages.

Bryant Chucking Grinder Co., Springfield, Vt. — The feature of this display was a new automatic internal grinder, designed specifically for high production grinding of bore diameters from ¼ to 3 in., up to 4-in. deep. The new grinder will swing work up to 9 in. and has a hydraulic and electronic control arrangement providing completely selective, infinitely variable cycles. It has preloaded ball bearings on both longitudinal and cross slides. The feed controls consist of three adjustable cams and five rheostats, and two electrical timing devices may be adjusted to provide the desired length of "spark out" for both rough and finish grinding. Also displayed were other internal grinders, and grinders for internal, face, and OD grinding in one chucking.

Buffalo Forge Co., Buffalo, N. Y. — This display consisted of 12 of the company's pieces of equipment, including the No. 10 billet shear, the new No. 9 locomotive spring punch and shear, No. 1 vertical bending roll, Type OA bending roll (illustrated) adaptable to pipe bending, No. 0 combination punch, shear, and bar cutter, No. 22 floor drill, the RPMster (illustrated), a tool room and production drilling machine, the No. 18D floor type drill, the No. 16 pedestal drill, the No. 15 floor drill, the 15M bench drill, and the No. 14 precision drill for tool room and production service.

Buhr Machine Tool Co., Ann Arbor, Mich. — Several fixed center type multiple spindle drill heads, a Buhr-Matic hopper feed double-end drilling machine, a new bench type tapper, and a double column drill press featuring a power-index table and cam feed cycle were features of this exhibit. The bench tapper is equipped with change gears, making all threads possible in tap diameters from No. 4 to 5/16-in. in cast iron or ¼-in. in steel, with Class 3 fits. The new Buhr-Matic was shown cross drilling, reaming and countersinking the lacing holes on the hex head of a cap screw.

Bullard Co., Bridgeport, Conn. — Three-spindle horizontal lathes (illustrated) incorporating a new principle in shaft turning, and operating automatically through 39 different functions by the Bullard Man-Au-Trol control at spindle speeds up to 1200 rpm, were featured. Also shown were: Type K Mult-Au-Matic, a high speed development of the standard multiple-spindle machine tool operating at speeds up to 900 rpm; a spacer for positioning work without jigs under radial drills, a 30 and a 54-in. vertical turret lathe, a new version of the original Bullard vertical turret lathe, and a new model 30 horizontal lathe with tools mounted vertically on a slide behind the vertical plane in which the three spindles operate. This lathe has 16 feeds from 0.0003 to 0.0156 in., with 40 speeds from 50 to 1200 rpm, and semi-automatic loading and unloading. Another new machine, the type K Mult-Au-Matic, is a production machine with tripled speed, semi-automatic chucking, and adjustable strokes of slides for varying work heights.

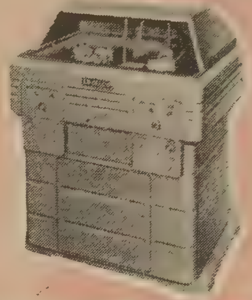
Bunting Brass & Bronze Co., Toledo, Ohio — The Bunting exhibit featured a variety of cast bronze bearings, standard and special, and the features of the sleeve bearing. Shown also were: How the oil film is ruptured and direct metallic contact results when the oil groove is incorrectly placed in the load carrying area of the bearing; ores from which bearing bronzes are made; and a sleeve bearing whose starting friction is no greater than the running friction.

Burg Tool Mfg. Co., Los Angeles — A complete line of the floating tool holders, featuring a neoprene mounting that permits self-alignment of tools, was shown.

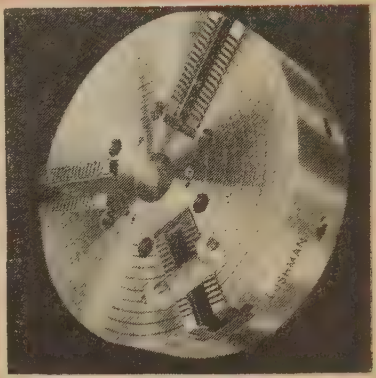
Carboloy Co., Inc., Detroit — Carboloy had a model tool grinding department in operation and provided a free grinding service on all carbide

Ex-Cell-O Piston Boring Machine. . .

Eastern Machinery's H&G Chaser Grinder. . .



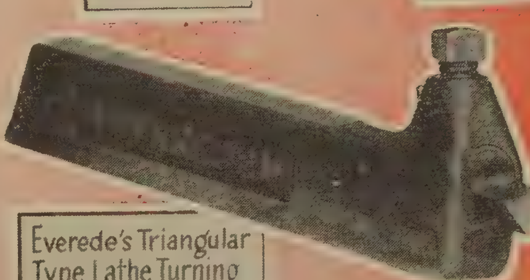
Ex-Cell-O Style 40 Automatic Tool Grinder. . .



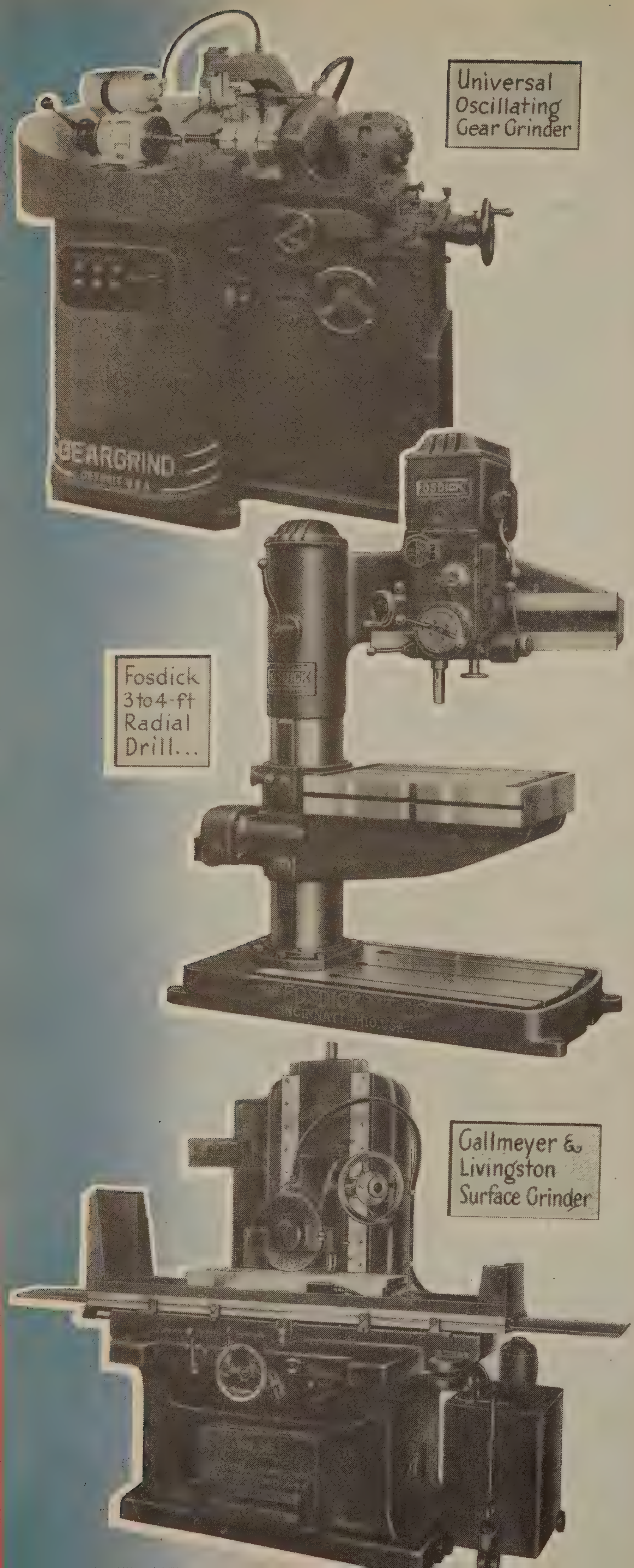
Ajustabe Jaw Air Operated Power Chuck. . .

Federal Electricator Gage

Fellows Planetary Gear Shaper. . .



Everede's Triangular Type Lathe Turning Tool . . . . . .



Universal Oscillating Gear Grinder

Fosdick 3 to 4-ft Radial Drill...

Gallmeyer & Livingston Surface Grinder

single-pointed tools in use in the show. Various types of grinders, including 14, 10, and 6-in. models as well as a No. 2 Brown & Sharpe surface grinder for grinding chip breakers, were used. Exhibitors specified tool angles and other specific grinding information, and the tools were picked up, ground, and delivered daily to the exhibitors' various booths.

Carborundum Co., Niagara Falls — An entirely new grinding wheel, Series 20, incorporating a new type of ceramic and a new type of abrasive grain, was featured. The new wheel is designed for tool room use, surface, cylindrical and form grinding for faster stock removal, less heat concentration and better finish. Also, a comprehensive group of other types of abrasives was shown.

Carlton Machine Tool Co., Cincinnati — Typical radial drills made by the company, along with a universal table, a plain box table, revolving jigs, and an automatic tapping reverse, were displayed.

Century Electric Co., St. Louis — A new design of flange machine tool motors, called the "D" flange, was displayed, along with various fractional and integral horsepower motors. Also, various types of single and polyphase motors were on display, including capacitor start induction run motors, splash and explosion proof squirrel cage induction motors, slip ring motors, gear and dc motors.

Chicago Drillet Corp., Chicago — An instant speedchanger for drill presses running an actual production job in conjunction with a standard box jig and the "Quadrill," a four position drilling and tapping turret head, were displayed. The speedchanger gives slow speeds for tapping with a change of speed for large and small drills. Speeds may be chosen while the drill press is running, and the unit can be attached to any drill press.

Chicago Rivet & Machine Co., Bellwood, Ill. — Several automatic rivet setting machines, single and multiple setters, were displayed, showing proper applications of tubular and split rivets.

Chicago Screw Co., Chicago — Safety Plus socket head cap screw products, hardened and ground screw machine parts, cast iron and steel valve tappets and screw machine assemblies were displayed.

Chicago Wheel & Mfg. Co., Chicago — A metallic sheathed grinding wheel was shown in operation for the first time at the show. The wheel is vitrified bond, and the metallic sheathing tends to dissipate heat at the arc of contact over the entire area of the wheel. Also shown were Handee and Hypower portable tools, mounted grinding wheels and abrasive specialties.

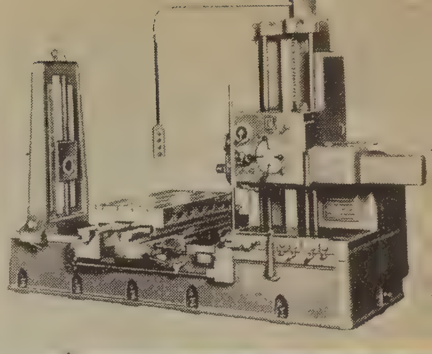
Cincinnati Bickford Tool Co., Oakley, Cincinnati — Among the equipment shown were the Super Service Radials (illustrated) with 2½ ft arm length, 7½ in. diam column, to 10 ft arm length and a 26 in. diam column. Two types of upright drilling machines were shown in sizes ranging from 21 to 28 in., and among the special machines were the Super Service Jig Borer, the portable horizontal drilling machine (illustrated), and the Super Service precision drilling machine designed for a new type hydraulic compound spacer table.

Cincinnati Gilbert Machine Tool Co., Cincinnati — Radial drills, table type horizontal boring, drilling and milling machines, and hand rotating tables were displayed.

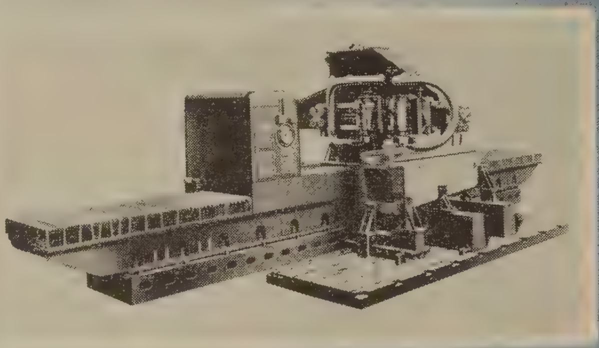
Cincinnati Lathe & Tool Co., Oakley, Cincinnati — Seven machines in operation were shown by this company, including the new Tray-Top, Contourmatic and Tracermatic lines of Cincinnati lathes. Tray-Top, designed to meet demands for a light duty low cost lathe, is made in four swing sizes, 10, 12.5, 15 and 18 in., with distances between centers from 18 in. and up in increments of 6 in. They have 12 spindle speeds. The Contourmatic and Tracermatic lathes have all-hydraulic tracer mechanisms. Feeds are variable, longitudinal tracing length is 34 in., cross tracing length is 12¼ in. or 24½ in. on diameter and spindle speeds are controlled by work diameter.

Cincinnati Milling & Grinding Machines, Inc., Cincinnati — A large display of milling and grinding machines, totalling 48 in number with 17 of them of new design, made up this exhibit. There were nine milling machines, five milling and die sinking machines, nine automatic millers, three broaching machines, four cutter sharpening machines, and 16 grinding and lapping machines. A new line of knee and column type milling machines, known as Dual Power (illustrated) and High Power Dial types, was shown. High Power Dial types were in plain, uni-

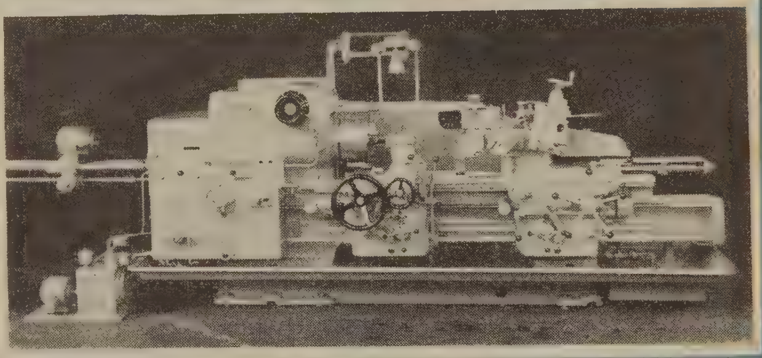
Gidding & Lewis
Precision Way
Grinder. . . .



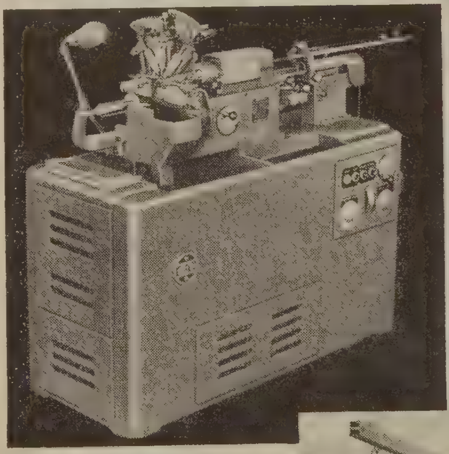
Gidding & Lewis
Boring, Drilling
and Milling
Machine. . . .



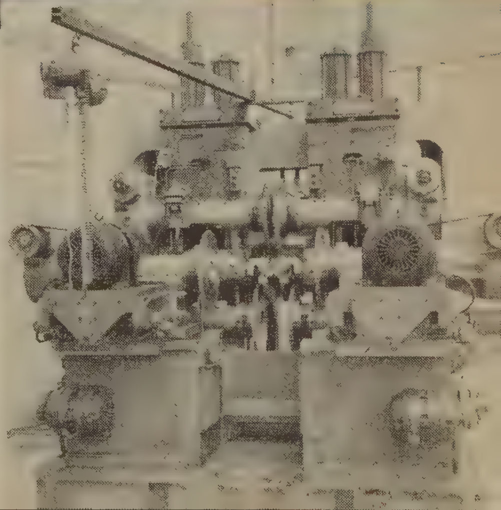
Gisholt
1L Saddle
Type
Turret
Lathe. . .



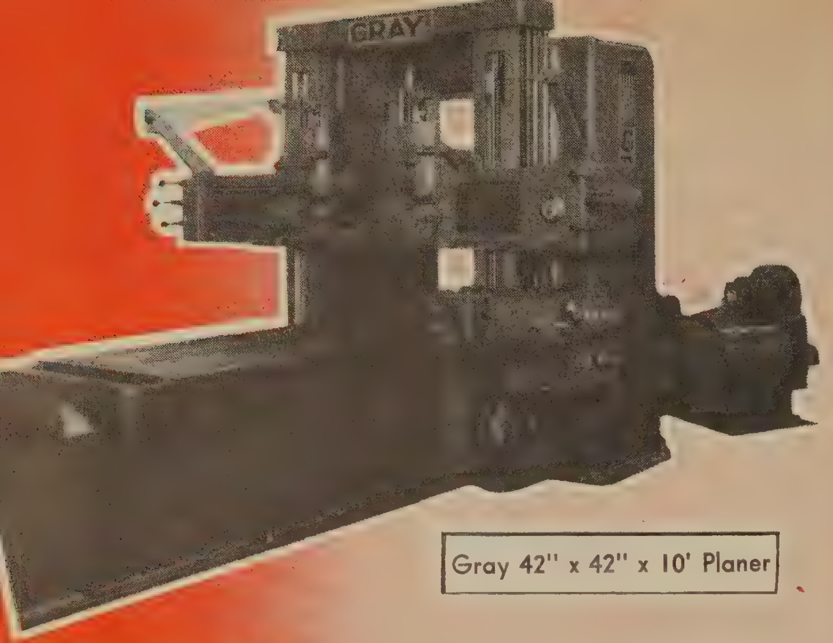
Gorton Swiss Type
Automatic. . . .



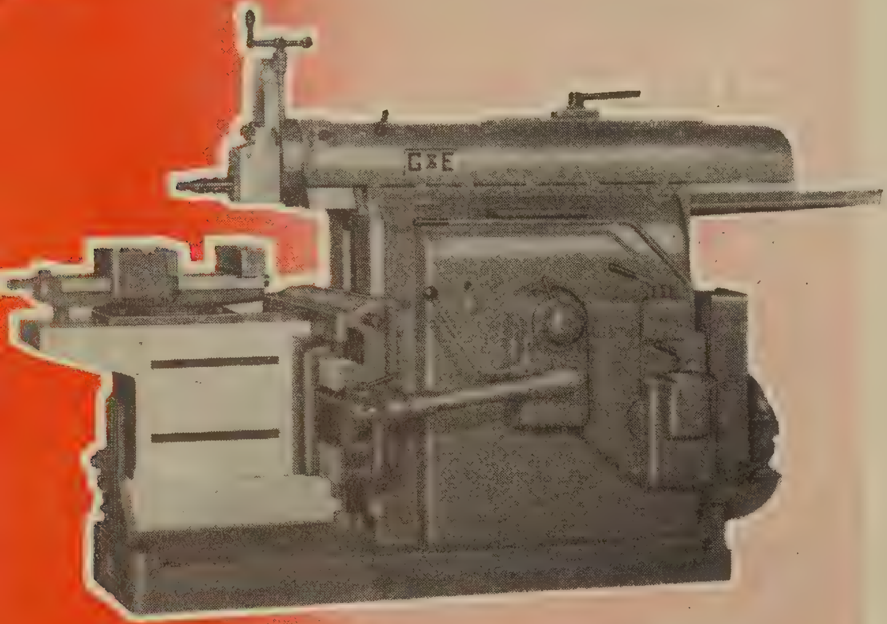
Gisholt Crankshaft
Miller. . . . .



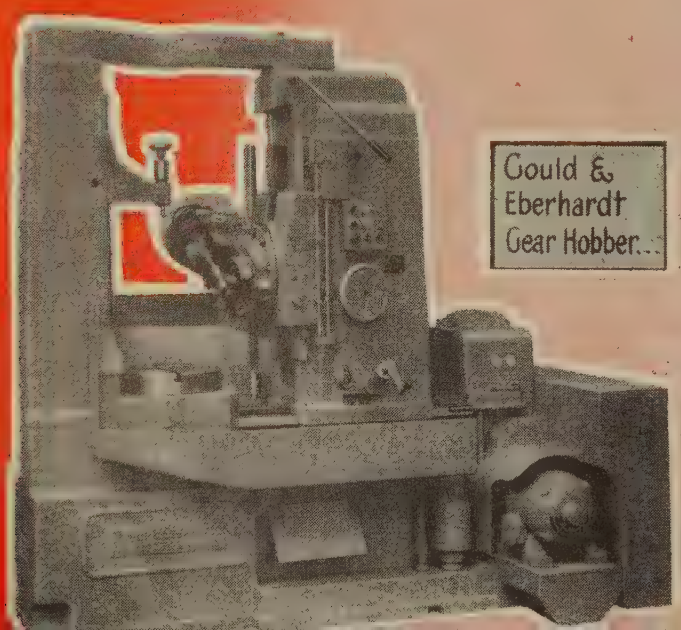
Geometric Self
Opening Die
Head. . . .



Gray 42" x 42" x 10' Planer



Gould & Eberhardt 32-in. Shaper



Gould & Eberhardt Gear Hobber...

versal and vertical styles, and Dual Power machines are built in plain and vertical styles. Dual Power machines have two ratings for the horsepower available at the spindle. There are 24 spindle speeds, 14 to 1400 rpm, and 32 feeds, ¼ to 60 in. per min. A new Filmatic 10 in. hydraulic universal grinder (illustrated) was displayed, available as a precision tool room grinder or a precision production grinder.

Cincinnati Planer Co., Cincinnati — The Hypro line of planers, boring mills, and planer type millers were featured. The 6-ft vertical boring and turning mill (illustrated) with one left-hand ram type rail head, one right-hand turret type rail head, and one right-hand side head; a double housing planer with two rail and two side heads (illustrated), an openside planer with two rail and one side head, and an electronic drive planer type milling machine with four 8¾-in. quills, dual purpose, 40-hp milling heads for high-speed and carbide tools, were displayed.

Cincinnati Shaper Co., Cincinnati — Shapers, press brakes and shears in action were the features of this exhibit. Several shapers (illustrated) with different types of tables, heads and accessories showed heavy and high-speed cutting applications. Brakes equipped with manual and air clutch, tonnage indicators, and other developments for notching, crimping, rolling and bending were shown. The shears featured an inclined ram, hydraulic holddowns, squaring arm, light beam gage, slitting gage, sag eliminator, and other new developments.

Clark Controller Co., Cleveland — Two machine tool electrical control panels, motor starters, contactors, relays, switches and other standard accessories, along with pushbutton stations, were displayed. A panel with a contactor operating an air valve and timed with an electronic timer was in operation.

Clearing Machine Corp., Chicago — A single action, two point suspension, two point mechanical press; a straight sided double crank press; a double action hydraulic press, along with press drive assemblies and a model of eccentric gear drive and plunger, were featured at this exhibit.

Cleereman Machine Tool Co., Green Bay, Wis. — Machinery representative of its complete line of heavy-duty upright drillers, precision jig borers, and special drilling machines were exhibited. The electronic control jig borer (illustrated), with added power drive to the table by means of electronically controlled motors to provide pre-positioning control, power traverse, and a full range of milling feeds, permits not only boring to close tolerances but also milling.

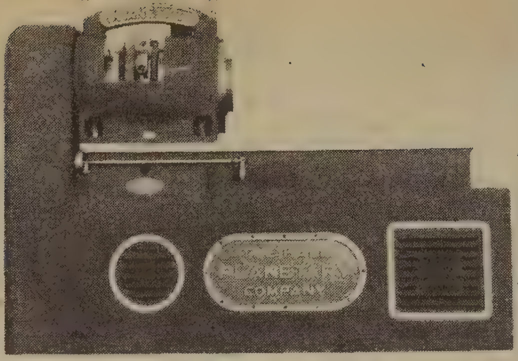
Cleveland Automatic Machine Co., Cincinnati — Two new machines, a 2½-in. single spindle automatic turret machine (illustrated), known as Dialmatic model AB, and the model 200 high pressure hydraulic die casting machine were exhibited, along with a 5¾-in. single spindle turret machine and a model J double end machine. The Dialmatic drive consists of a motor generator set, a dc motor rheostat, a rotary selector switch with 10 contactors, and a control panel with 10 rheostats. The electric tool feed drive makes independent, infinitely variable forward and return tool feeds possible without cam changes for each of five tool positions in the turret head.

Cleveland Hobbing Machine Co., Cleveland — The Rigidhobber, an eight-spindle rotary hobbing machine, along with a single-spindle hobbing machine and a twin-spindle turning machine, were featured.

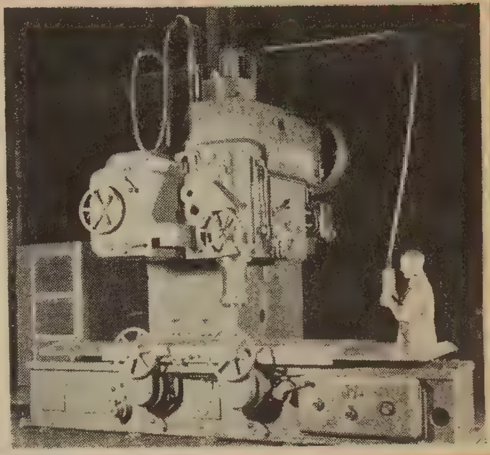
Cleveland Planer, Cleveland — A representative group of this company's openside planers were shown.

Commander Mfg. Co., Chicago — Four new eight spindle Multi-Drills and an attachment to any drill press that will drill eight holes at one stroke in any pattern on or within a 9 in. circle, were shown. Other models of Multi-Drill were displayed, along with numerous standard spindles, adapters and collets.

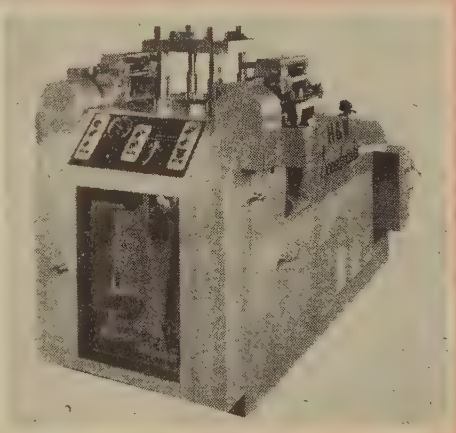
Cone Automatic Machine Co., Inc., Windsor, Vt. — A four machine display, featuring a new 1-in. bar machine, six-spindle Conomatic (illustrated), made up this exhibit. The new machine marks Cone's entrance into the faster spindle speed field and has 26 outstanding features, 12 of which are claimed by Cone to be exclusive. At the show, the machine produced two mating parts in one machining cycle utilizing 25 tools and six attachments. A 5-in. four-spindle Conomatic was exhibited, and a new type of multiple spindle, 1⅝-in. bar machine, called Multi-Single, gave demonstrations of accurate volume production of pieces requiring few machining operations.



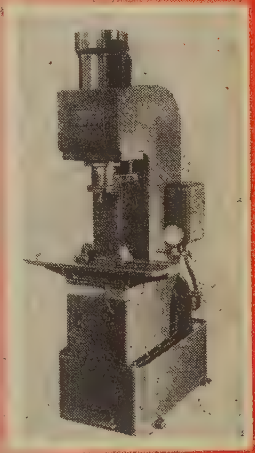
Hall Planetary Thread and Form Miller . .



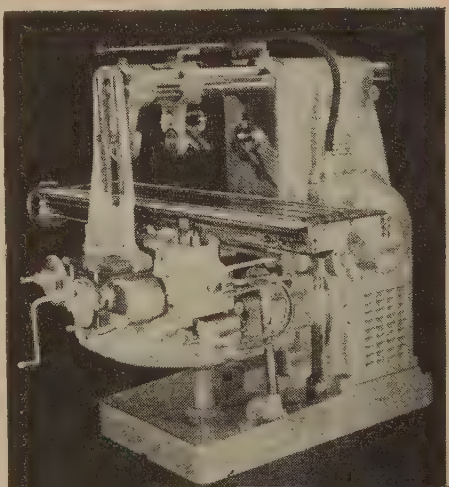
Ingersoll Die Block Milling Machine . . .



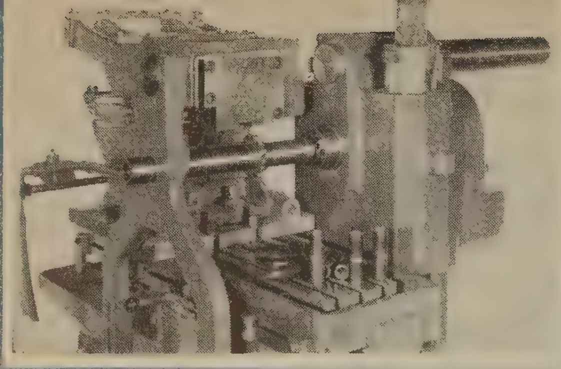
Henry & Wright 25-Ton Speedmaster Dieing Machine . . .



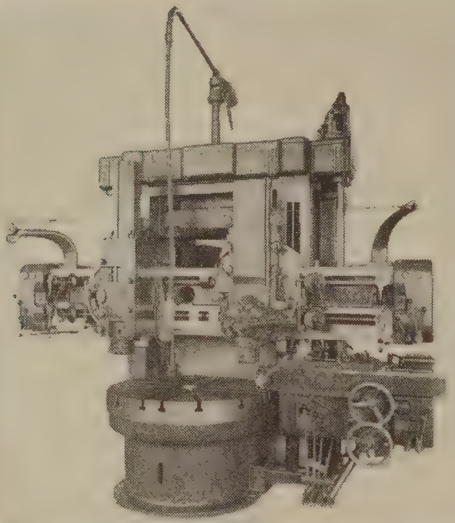
Hannifin 25-Ton Straightening Press . . . .



Kearney & Trecker Knee Type Milling Machine . . . .

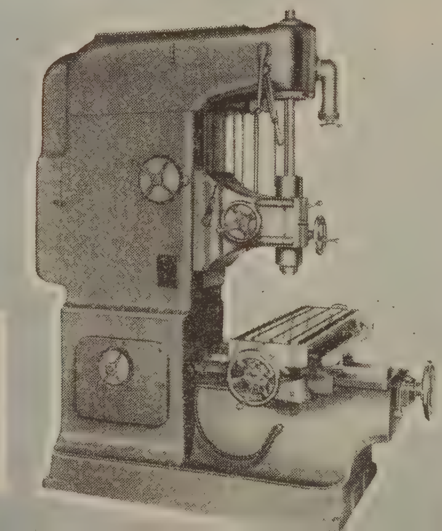


Kent-Owens No. 1-14 Hydraulic Milling Machine...



King 52-in. Vertical Turning and Boring Machine...

Kingsbury Automatic Indexing Machine...



Knight Milling and Boring Machine...

Consolidated Machine Tool Corp., Rochester, N. Y. — Photographs of presses, milling machines, chucks, die heads, and other equipment manufactured by this company were displayed in its booth.

Covel Mfg. Co., Benton Harbor, Mich. — A line of surface, cutter and tool, and twist drill grinders were exhibited. The cutter and tool grinders featured a new type spindle assembly designed for use with diamond wheels for grinding carbide cutters. The spindle has reversible rotation, and wheels can be mounted at either end of the spindle. The head swivels 180°, putting either wheel in working position.

C. C. Craley Mfg. Co., Shillington, Pa. — The complete line of Off-Set boring heads made by this company was shown.

Cuno Engineering Corp., Meriden, Conn. — Various filters made by Cuno were displayed, including the self-cleaning Auto-Klean; motor-operated and hand-operated types; "built in" models; Coolant-Klean filters; air filters, and the Micro-Klean line of replaceable cartridge type filters.

Cushman Chuck Co., Hartford, Conn. — A complete new line of air-operated power chucks, air cylinders and control equipment, in addition to a representative display of wrench-operated chucks, were shown.

Cutler-Hammer, Inc., Milwaukee — Complete controllers, manual, magnetic and electronic; control accessories, and control components were shown at this exhibit. A new diaphragm type timer, which provides for either time delay after energization or time delay after de-energization, was featured. Easily adjustable, this timer will provide consistent time intervals from 0.3 sec to 3 min.

Davenport Machine Tool Co., Inc., Rochester — A representative group of high-speed five-spindle automatic screw machines, completely tooled, was exhibited.

Davis & Thompson Co., Milwaukee — The Roto-Matic line of tools was shown, including the No. 1-A Roto-Matic continuous rotary double end drum type milling machine (illustrated); No. 2-A miller of the same type; the 8 LV Roto-Matic vertical 8-spindle continuous drilling machine, and the 12V, a 12-spindle continuous drilling machine.

Dayton Rogers Mfg. Co., Minneapolis — This company's services on small lot runs of metal stampings were displayed, and a new Hydro-pneumatic cushion designed to give maximum ring holding capacities in limited bed areas for stamping presses was shown. In operation on a punch press was a Hydraulic Overload Pitman which was recently introduced.

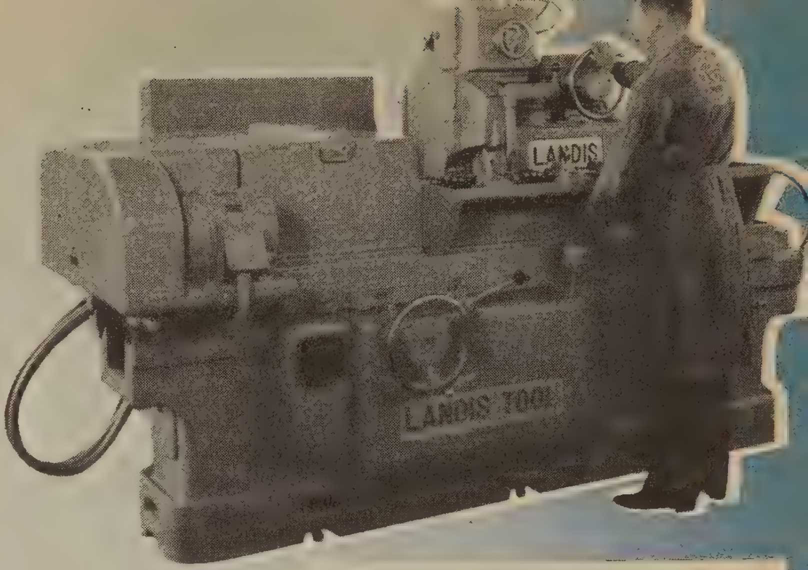
Dayton Rubber Mfg. Co., Dayton — A complete line of V-belts as well as the Dayton cog belt, wire cord belt, connector type V-belt, double angle, oilproof and fractional horsepower belts made up this exhibit. The advantages of rayon cord, used in all Dayton V-belts, were shown.

Defiance Machine Works, Defiance, Ohio — The new Model 25A horizontal boring mill (illustrated) and the new universal milling attachment for use on horizontal boring mills were featured. There were also models of this firm's powered metal presses, drills, and special machinery. The milling attachment is designed to use a 2½ in. diam facing cutter with a 2½ in. adjustment of its spindle, the spindle being standard so that it will run the same speed as the boring mill's spindle. It can be furnished with a speed ratio of 1.5:1 or 1⅞:1, the latter giving a speed of 1875 rpm. A flat face can be milled at any angle from 0° to 360° concentric with the spindle or at right angles or parallel to the spindle.

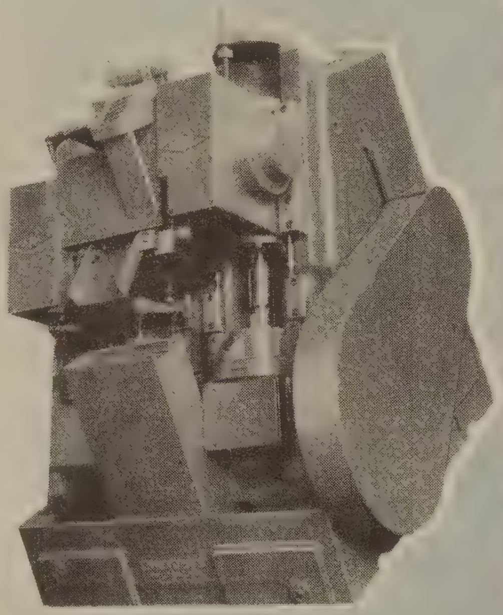
Denison Engineering Co., Columbus, Ohio — New products displayed were four Multipress Midgets, a 1-ton model (illustrated) adaptable for gang installations and successive operation requirements; Multipress equipped with a new dial feed table accessory for automatic feeding to the press ram; new high pressure, high volume pumps with delivery up to 32 gpm at continuous operating pressures of 3500 psi, and an operating display demonstrating new control valves.

DeVlieg Machine Co., Detroit — Two models of the 3-B Jigmils, both equipped with Duplitrol and one with a new indexing table, introducing a new method for machining production parts requiring boring operations, were on display. Also, Microbore, a new cutting tool for boring, turning, grinding, and other operations, was shown, along with a group of accessories for furthering the usefulness of the Jigmil.

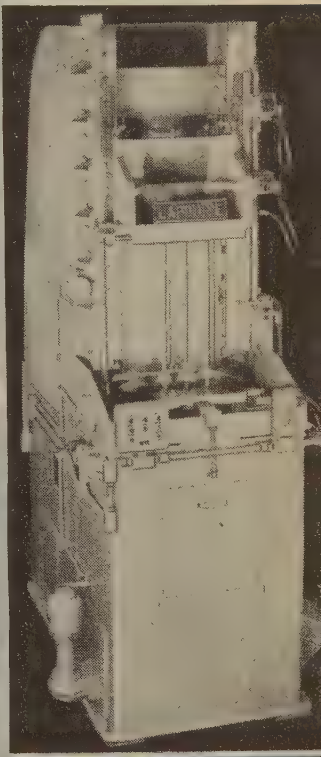
DoALL Co., Des Plaines, Ill. — This



Landis Tool Co's 5X40-in. Cam Grinder

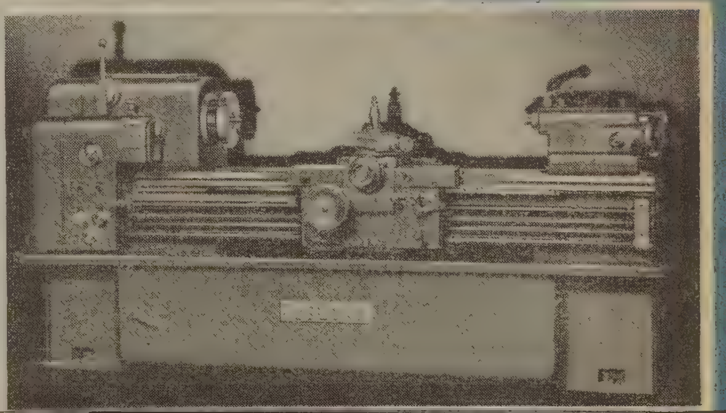


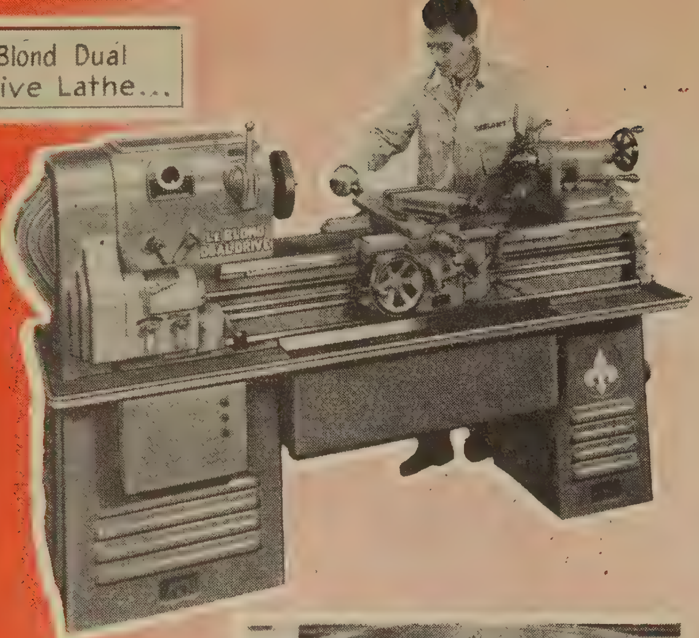
Landis Machine Co. Thread Roller...



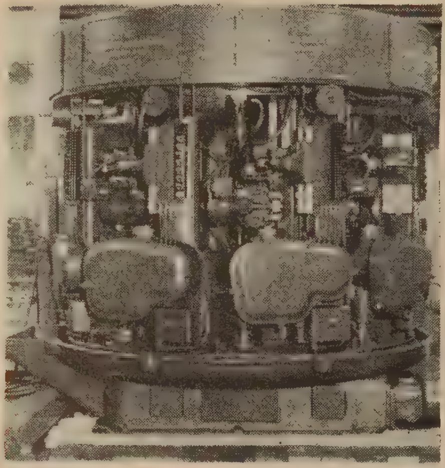
Lapointe 20-ton Vertical Broaching Machine. . . .

Le Blond 16X54-in Heavy Duty Lathe

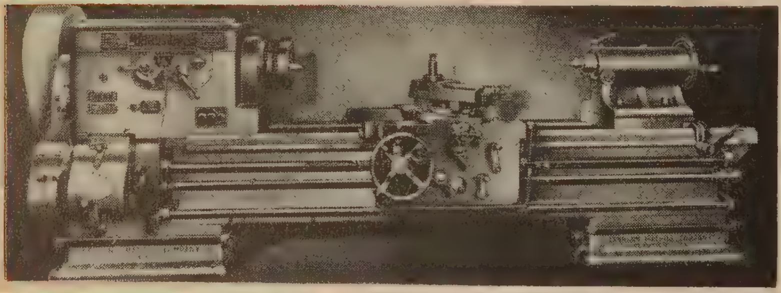




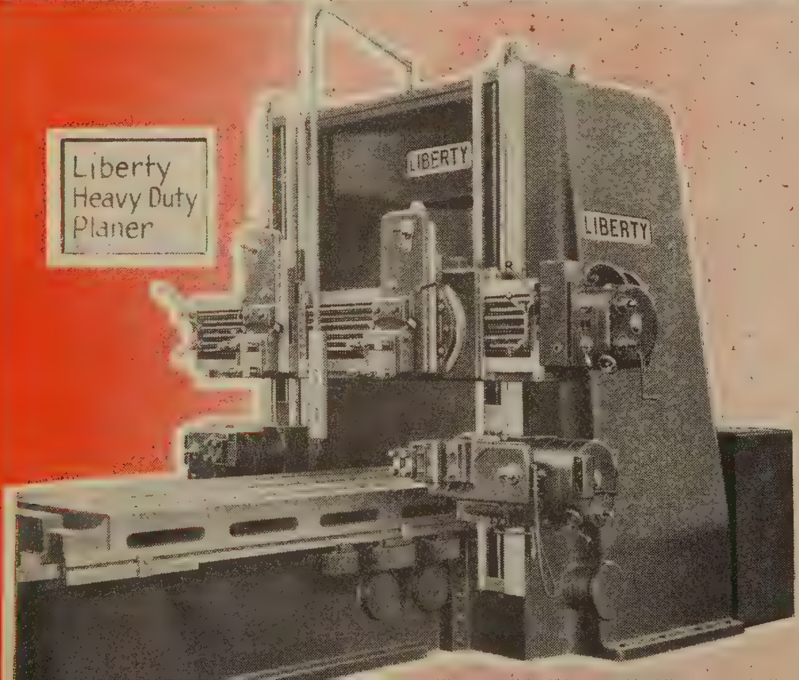
LeBlond Dual Drive Lathe...



Lees Bradner Rotary Gear Hobber...



Lehmann Hydratrol Lathe...



Liberty Heavy Duty Planer

exhibit was designed as an educational display of all types of cutting tools, band saws, files, cutting oils, lubricants and machine tool accessories. Models, job samples and cutting performance was demonstrated. A new segregator for inspecting small parts and checking dimensions was demonstrated.

Dore Mfg. Co., Inc., Grayling, Mich. — Two models of the wire straightening and cutoff machine were shown. Model A, developed in the past year, straightens and cuts wire from 0.040-in. diam to 0.156 (5/16) in. diam. It will cut to any length within a tolerance of 0.005 in. Model C has capacities of 11 gage to 5/16 in. diam wire. Production of 150 to 180 ft per min depends on type and length of wire being cut. Also exhibited were payoff reels, Load-Tilt reels, the R-3 upright reel, and wire wagons.

Dow Corning Corp., Midland, Mich. — To demonstrate the additional power that can be delivered by Silicone insulated motors, a Silicone insulated and a Class A insulated motor were made to run in opposition to each other. With Silicone insulation a 225 frame, 5-hp rated motor delivers 9 hp in driving a 254 frame Class A insulated motor rated at 7½ hp. The exhibit also included Silicone paints, varnishes, and greases.

Eastern Machine Screw Corp., New Haven, Conn. — The line of H&G screw thread cutting equipment was exhibited, along with an H&G threading machine and an H&G chaser grinder (illustrated). The new style SMM die head for chucking machines was shown.

Eclipse Counterbore Co., Detroit — Counterbores, countersinks, two piece core drills, cutters, and holders were displayed. One unusual cutter shown was a three diameter cutter. The largest diameter faces the part, the next diameter cuts a chamfer, and the third is an expansion reamer. All cutting surfaces were carbide tipped.

Elgin National Watch Co., Sapphire Products Div., Aurora, Ill. — Sapphire industrial bearings; cutting and boring tools for plastics, bronze and soft metals; burnish sizing tools for powdered metal bearings; plug and ring gages; gage anvils; wire and thread guides, and faced V blocks were featured at this display. Also shown were diamond compounds for cutting and lapping steels and ruby knife edged poising tools.

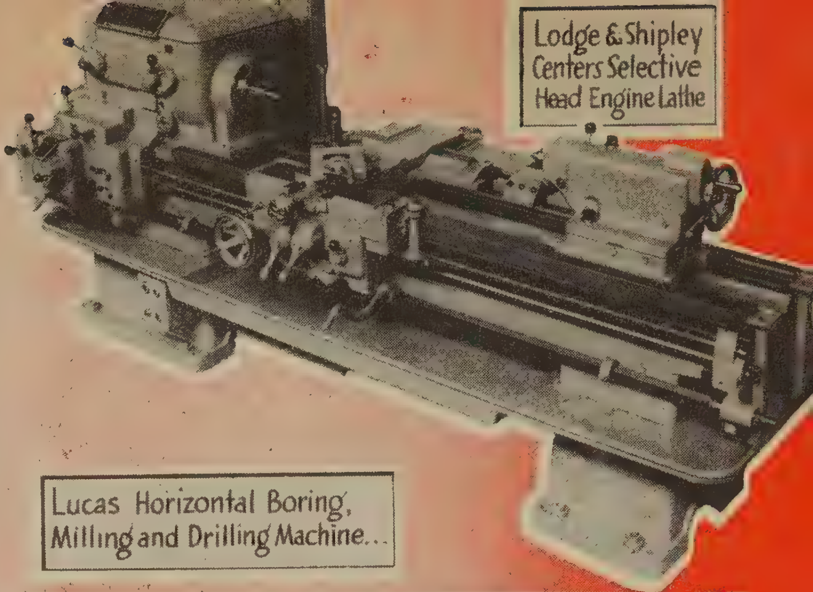
Enco Mfg. Co., Chicago — A representative group of the 30 models of turret toolposts and tailstock turrets was shown. The toolpost turret features 12 station indexing in the square turret instead of the usual four positions. Spaced 30° apart, each of the 12 stations remains square with the work. The new model 650 Hexturret was shown in operation on a 15-in. lathe. This attachment makes a dual purpose machine out of an engine lathe by converting it for screw machine and turret work.

Engineers Specialties Div., Universal Engraving & Colorplate Co., Inc., Buffalo — A new A. O. optical projection comparator; Pant-O-Jector for gaging turbine blades; gaging fixtures for optical comparators; scales; radius charts; protractors and other engineering supplies were exhibited.

Everede Tool Co., Chicago — Boring heads and lathe turning tool holders are the new products manufactured and exhibited, in addition to the company's present boring bars and boring bar holders. The lathe turning tool incorporates the use of triangular tool bits (illustrated), and is furnished in three sizes, both left and right hand. The tool will also utilize square tool bits.

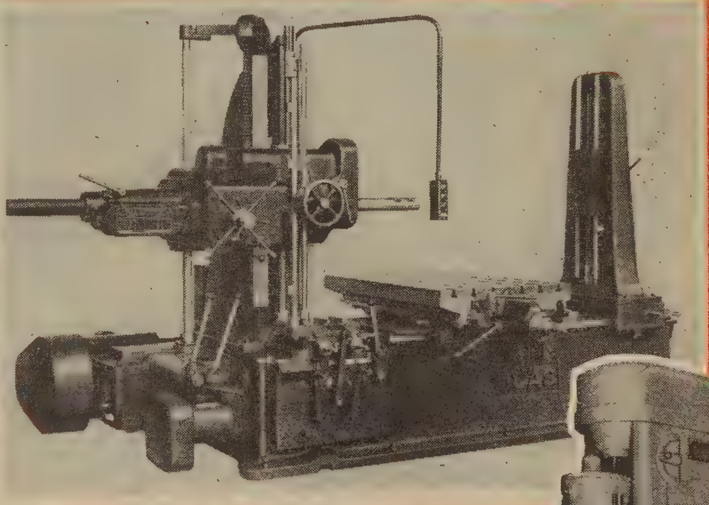
Ex-Cell-O Corp., Detroit — Precision boring machines (illustrated); thread grinders; cylinder boring machines; way type boring machines; small ID and OD finishing machines and center lapping machines were exhibited. Also, carbide tool grinders (illustrated); precision spindles; hydraulic power units; drill jig bushings; cutting tools; counterbore sets and broaches, and production parts were also shown. The new Style 35-A precision thread grinder, hydraulically operated and electrically controlled, is adaptable to different types, sizes and forms of work despite its automatic features. Leads from 1 to 128 threads per inch can be obtained with standard change gears. Right and left hand threads, straight, tapered or relieved, can be ground by the machine.

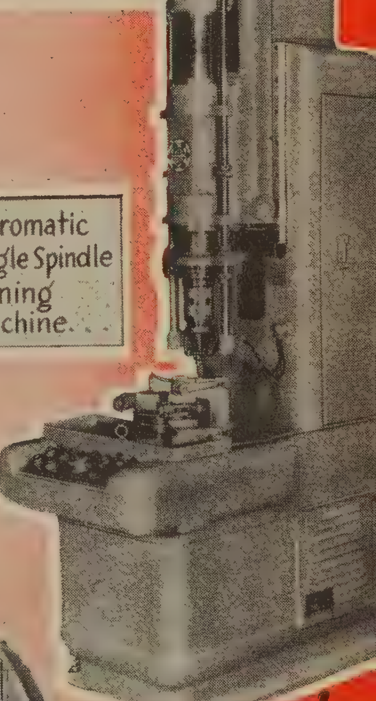
Fafnir Bearing Co., New Britain, Conn. — Super-precision ball bearings capable of sustaining spindle speeds in excess of 200,000 rpm and a new type of sealed ball bearing, the Plya-Seal line, were exhibited. A collection of detailed drawings of spindle designs and a series of new double-row width bearings incorporating a single row of balls were also shown.



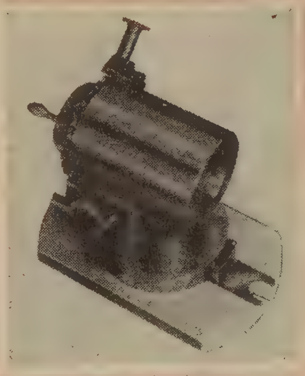
Lodge & Shipley Centers Selective Head Engine Lathe

Lucas Horizontal Boring, Milling and Drilling Machine...



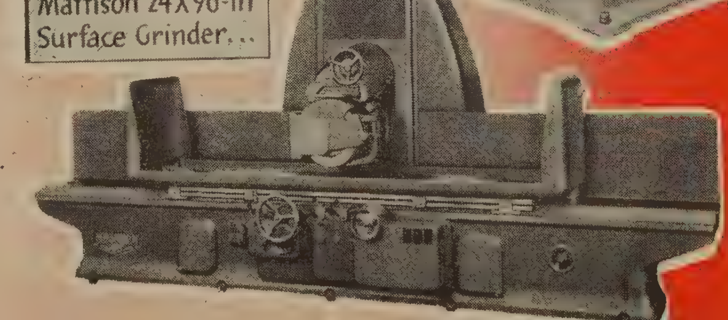


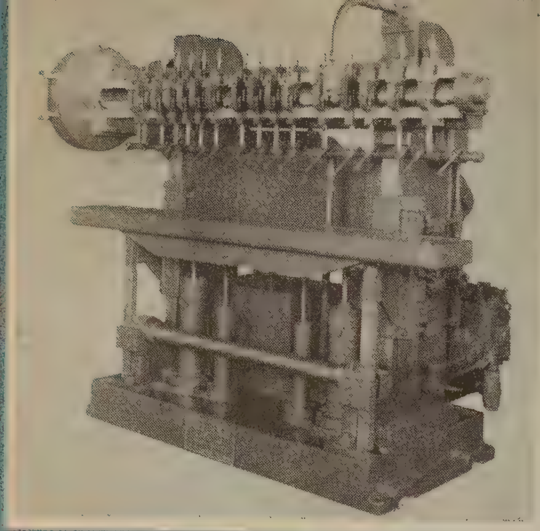
Micromatic Single Spindle Honing Machine...



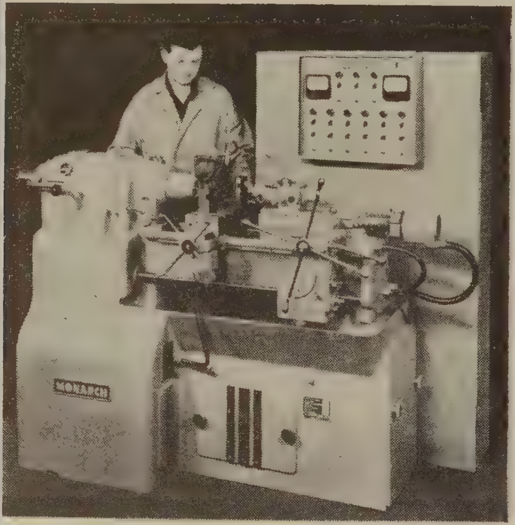
Matco Universal Dividing Collet Head...

Mattison 24X96-in Surface Grinder...

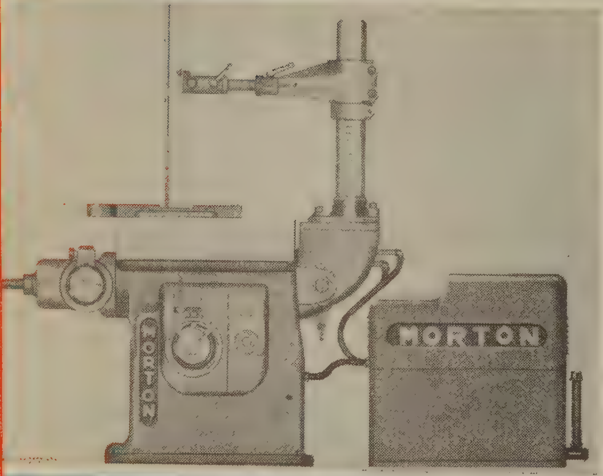




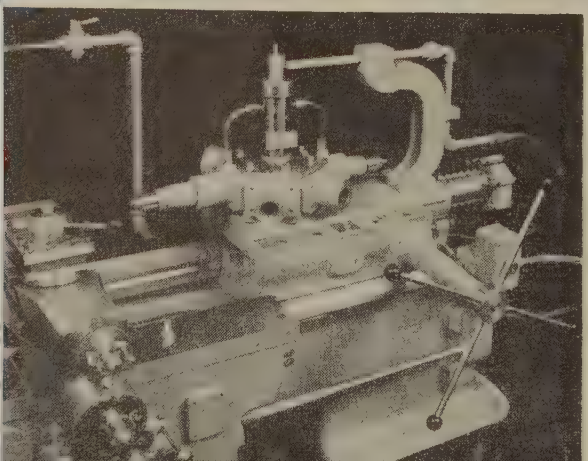
Moline 22 Head Straight Line Driller...



Monarch Electronic Controlled Speed-Matic



Morton Keyseater...



Monarch Manufacturing Lathe with Power Feed Turret...

Fairbanks, Morse & Co., Chicago — The new axial air-gap motor was featured at this exhibit, which included the company's line of conventional motors, fan cooled motors, copper spun rotors, and examples of spiral windings.

Federal Electric Products Co., Newark — Magnetic motor starters in sizes to control power circuits from ½ to 100 hp were displayed. These starters include manual or automatic reset overload relays and conform to the new NEMA standard mounting dimensions. The only moving part is a solenoid that rides on ball bearings, eliminating the possibility of mechanical breakdown. Also shown were Noark bus ducts. Noark controls, and other electrical equipment.

Federal Products Corp., Providence, R. I. — Various types of inspection and gaging equipment, including mechanical and electronic dial indicators (illustrated) and gages, sorting gages, snap gages and similar items were exhibited. The indicating micrometer, which shows on a "plus or minus O" dial the dimensions being measured, is the latest addition to the company's line.

Fellows Gear Shaper Co., Springfield. Vt. — A new planetary-type gear shaper for cutting external spur and helical gears (illustrated); a 10-station gear shaper for cutting external and internal spur and helical gears; a new general-purpose gear shaper for cutting gears up to 36-in. diam; and a new gear shaving machine for external and internal spur and helical gears were the features of this exhibit. Also shown were a line of gear measuring and testing equipment, two thread generators, a fine-pitch gear shaper, a helical cutter sharpening machine, and two No. 7-type gear shapers arranged for special work. The new planetary-type shaper employs a large gap-type cutter, 16-in. diam, around which the work planets. The cutter is reciprocated but does not rotate, and the work is held on individual work spindles carried in a rotating turret.

Felters Co., Unisorb Div., Boston — Machinery mountings employing felt pads coated with a plastic cement were displayed. The mounting eliminates the use of lag screws and bolts.

Fitchburg Engineering Corp., Fitchburg, Mass. — This was a photographic display of special purpose milling and boring machines for high production.

Fitchburg Grinding Machine Corp., Fitchburg, Mass. — This exhibit consisted of a plain cylindrical grinder, a continuous multi-spindle drum type automatic grinder, a double bowgage grinder, and several special grinding machines.

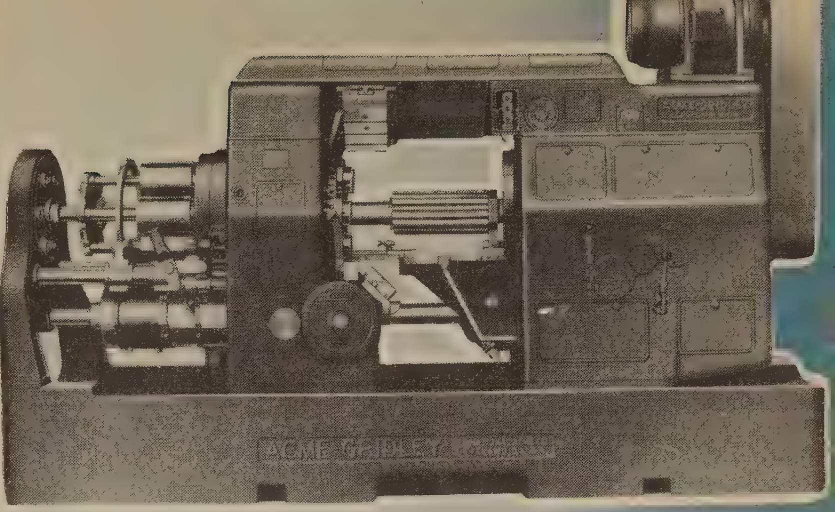
Foote-Burt Co., Cleveland — Several different drilling machines, including a four-spindle; a Hammond radial; and a special way-type drilling and tapping machine, along with a vertical broaching machine and a Hammond surface grinding machine were featured at this display.

Fosdick Machine Tool Co., Cincinnati — Drills and a jig borer were displayed by Fosdick. A new sensitive radial drill (illustrated) for small work, having a fixed arm that can be swung 360° and a table that moves up and down around the column, was one of the featured drill presses. Also shown were: a single purpose sensitive drill with spindle speeds from 100 to 3600 rpm; the heavy duty No. 4BMR drill; a series of 11 in. column radials with a sliding shoe fitted into a single column instead of the split column design; and improved 13 to 19-in. column radials, in which the clamping of the head and the clamping of the column are interlocked with the engaging of the feed mechanism.

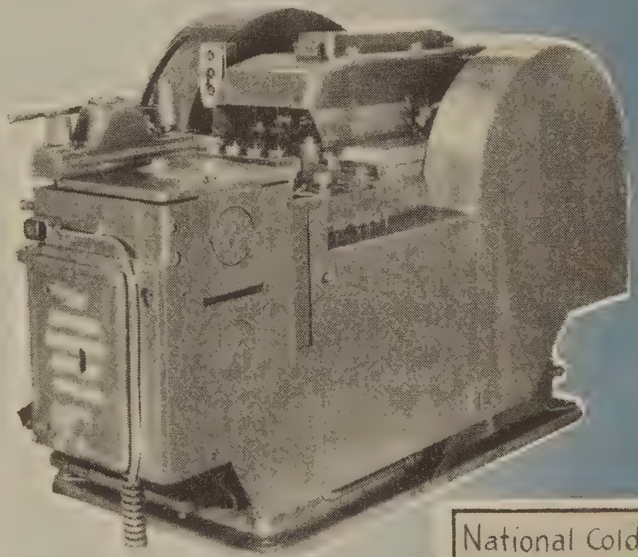
Furnas Electric Co., Batavia, Ill. — A line of electrical motor controls for motors up to 10 hp, including manual type reversing and multi-speed drum controllers, magnetic reversing switches, limit and pressure switches, and foot operated controllers were displayed.

Gallmeyer & Livingston Co., Grand Rapids — This exhibit consisted of the following types of grinders: Hydraulic feed surface grinders, both production and tool room types; a tool room type hand feed surface grinder; a hydraulic feed universal and tool grinder; universal cutter and tool grinders; a twist drill and a tap grinder; and a combination drill and tap grinder. The hydraulic feed surface grinder (illustrated) is built around a special high column and has a 20-in. diam wheel for grinding dies with guide or leader pins in position. The table is 12x36 in. with longitudinal and transverse movements sufficient to clear the entire working surface of the table. With a 20-in. wheel, the vertical movement of the wheel is 18 in. Longitudinal table speed is 125 fpm.

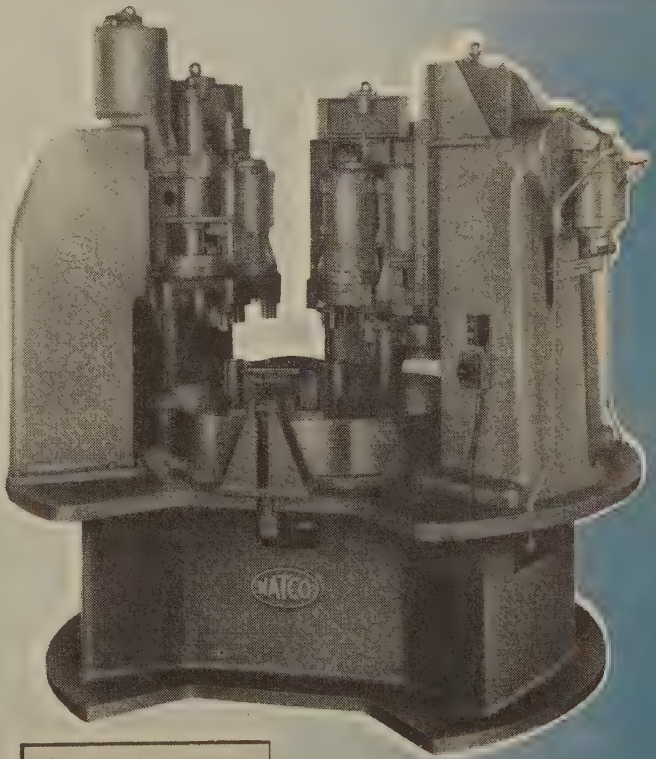
Gardner Machine Co., Beloit, Wis. — Two new flat surface grinding machines were exhibited. The special



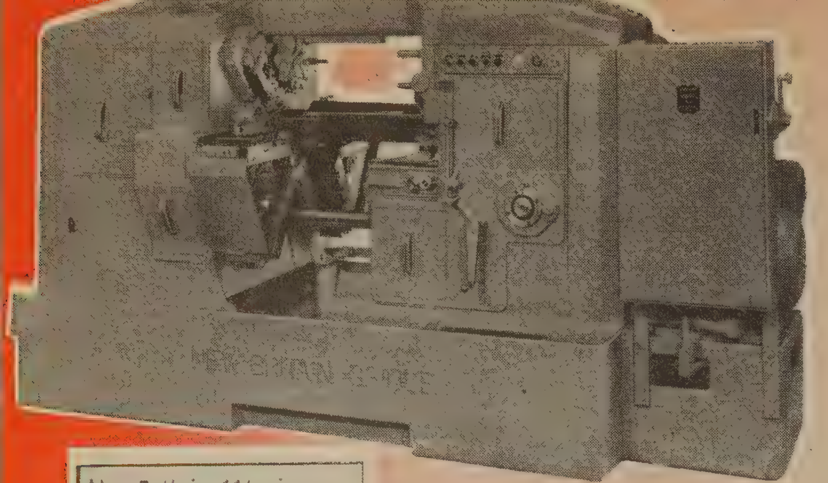
National Acme Six Spindle Bar Automatic. . .



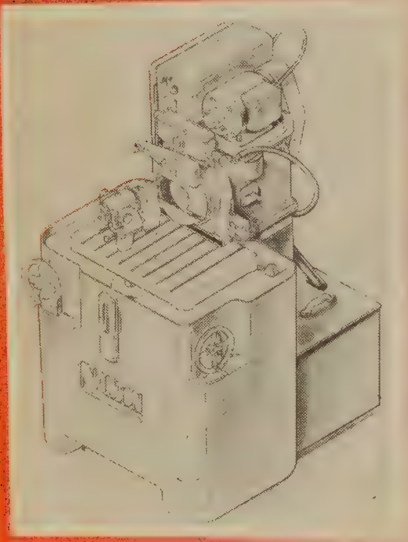
National Cold Nut Former. . .



Natco A-65 Cam Feed Unit. . . .

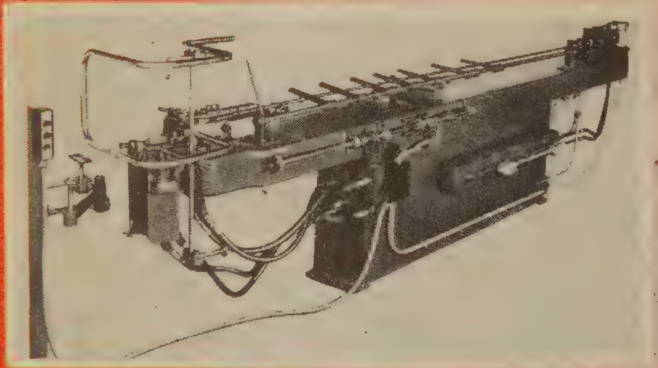


New Britain 1¼-in Automatic Screw Machine



No. 2 Bura-Way Tool Grinder...

OK Tool Co. Face Mill...



Pines Bending Machine

Speed-Flex Automatic Turret Lathe

double spindle grinder was designed for parallel surfacing operations and is equipped with a fixture so that parts having parallel flat surfaces pass between opposed abrasive members in a constant stream. The other, a single-head grinder, is equipped with a power operated oscillating work table. The grinding head is mounted on a power actuated slide. Also shown were vertical spindle horizontal disk grinders, grinding wheels, and dresser heads.

Gay-Lee Co., Ferndale, Mich. — Carbide screw slotting saws, carbide commutator slitting saws, carbide slitting saws, chamfering cutters, gear tooth rounders, and carbide rotary slitting knives were displayed.

Gear Grinding Machine Co., Detroit — An external gear grinding machine, a universal oscillating grinder (illustrated), clutches, couplings and universal joints were exhibited. Featured was a new machine for formed wheel grinding of external and internal gears, external and internal involute splines, straight splines, serrations and racks.

General Electric Co., Schenectady — A new adjustable speed induction motor, a new feed-traverse gear-motor drive, and a new inductor frequency converter were the highlights of this exhibit. Also displayed were machine tool transformers, plugging switches, oil tight push button units, a new electronic positioning control system, and relays and switches. The new induction motor is rated from 3 to 50 hp and features infinitely adjustable speed over a 3:1 ratio.

General Machinery Corp., Niles Tool Works Div., Hamilton, Ohio — Because this company's machines were too large, the exhibit consisted of model machinery and animated descriptions.

Geometric Tool Co., New Haven, Conn. — A new line of Supermetric ground thread chasers along with new and improved threading tools and chasers were exhibited. A new DS self-opening die head (illustrated) that can be converted into four different types by a simple adjustment for each was displayed. It may be set for pull-off trip or outside trip for automatics, or as a pull-off or outside trip for hand machine applications.

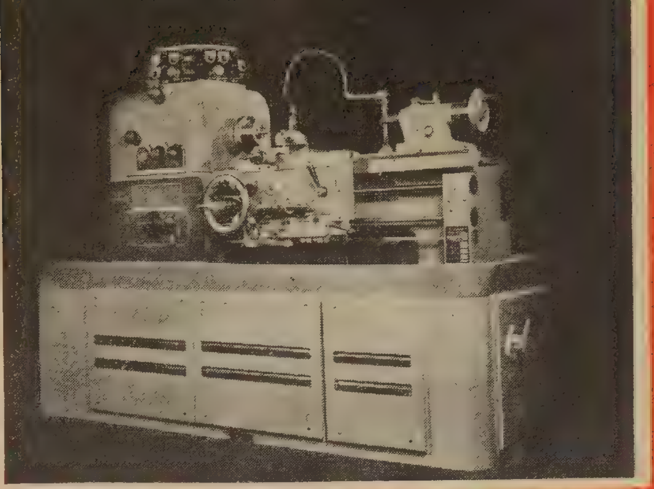
Giddings & Lewis Machine Tool Co., Fond du Lac, Wis. — Three new and one improved machines were exhibited. A new table type milling and boring machine for small work, with a tracing attachment for die work was shown. Also, there was the model 300-T high speed boring (illustrated), drilling and carbide milling machine. Handling up to a 30 in. cube and 8000 lb, the range of this machine is broad especially when such attachments and accessories as rotary tables and continuous feed facing heads are employed. A new precision way grinder (illustrated) was exhibited which develops surfaces of flatness varying only a few ten-thousandths over a length of 20 ft or more. Grinding may be done at any angle required for V-ways, dovetails, vertical surfaces or flat ways. An improved horizontal boring, drilling and milling machine, model 570, is able to handle large weldments and castings in iron and steel.

Gisholt Machine Co., Madison, Wis. — One of the largest exhibits, Gisholt displayed four universal ram type turret lathes, four saddle type turret lathes (illustrated), three No. 12 hydraulic automatic lathes including both chucking and between-centers arrangements, two Simplimatic automatic lathes with both horizontal and vertical carriage arrangements, three Fastermatic automatic turret lathes, five Superfinishers, two cylindrical surface superfinishing attachments for engine lathes, one static balancing machine, four Dynetric balancing machines, one special turn milling machine (illustrated), as well as five types of chucks, a new automatic work driver, an adjustable single cutter turner, and a cutaway model of a saddle type turret lathe headstock.

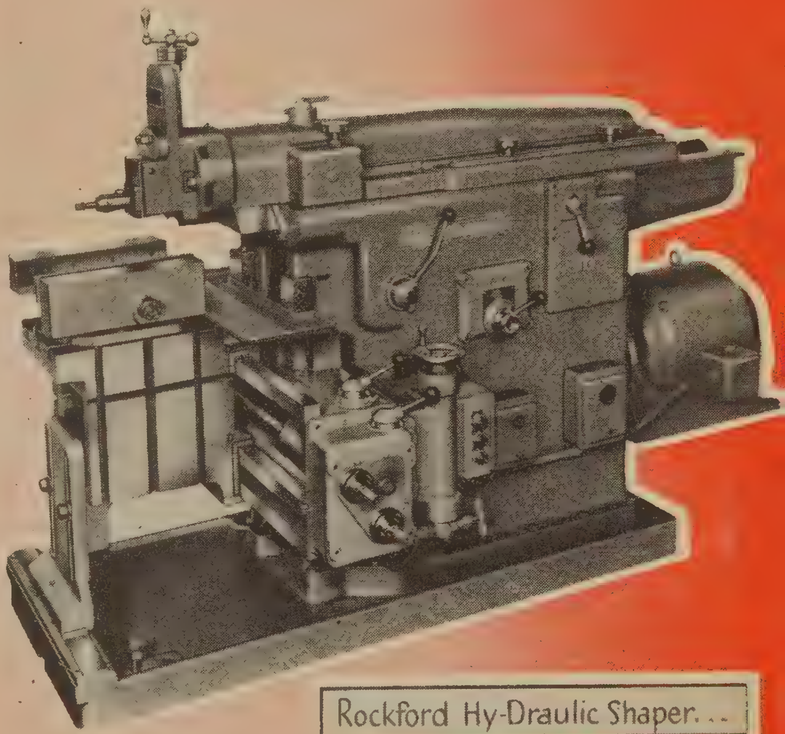
Gits Bros. Mfg. Co., Chicago — Oilers, oil and grease seals, manual and automatic lubricating devices and centralized oiling systems were featured at this display.

Gleason Works, Rochester, N. Y. — Bevel gear generators; planers; tool sharpeners; spiral bevel, Zerol bevel and Hypoid generators; grinders, roughers, finishers, burnishers, and lappers; cutting tool sharpeners; gear quenching presses; gear, cutter and tool hardeners; arbors and chucks, set up gages, and quenching dies were shown at this exhibit.

Goddard & Goddard Co., Detroit — Form and profile cutters of high speed steel; inserted blade cutters with high speed, carbide tipped, and cast alloy tipped blades; multiple thread milling cutters; heavy duty railroad cutters, boring tools and reamers; and solid body carbide tipped cutters were shown.

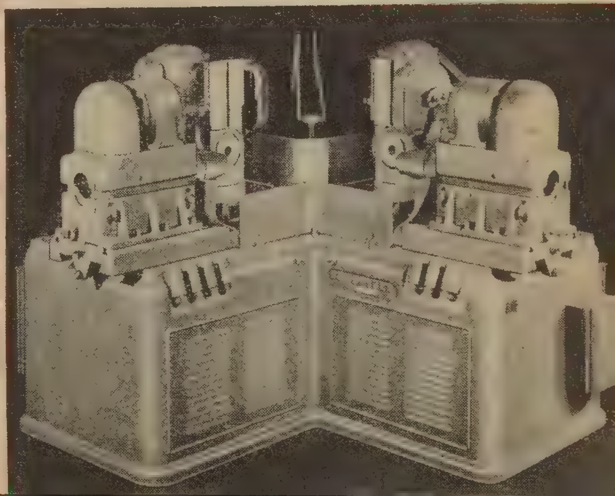


Rivett Toolroom Lathe . . .



Rockford Hy-Draulic Shaper. . .

Sheffield Gear Chamfering Machine . . .



George Gorton Machine Co., Racine, Wis. — Two models of pantograph machines of the two dimensional type; a three dimensional pantograph machine; and a Swiss type automatic were shown. The Swiss type automatic (illustrated) is a war-born development that will take stock from 0.020 to 7/16 in. diam and from 1/32 to 2¾ in. long Its threading capacity, internal or external, is ¼ in., with a maximum length of thread of 2 in. The maximum drill diameter is 3/16 in. and it will drill to a depth of 2 in. Spindle speeds are infinitely variable from 1100 to 10,000 rpm. Also shown were the 9J model superspeed vertical mill, a new small three dimensional pantograph, a new duplicating milling machine, and a new horizontal type production milling machine.

Goss & DeLeeuw Machine Co., Kensington, Conn. — A double threading, four spindle standard tool rotating automatic chucking machine; a Duplex tool rotating four spindle automatic chucking machine; a high speed, four spindle, tool rotating automatic chucking machine; and a Threeway, seven spindle, tool rotating automatic chucking machine made up this exhibit.

Gould & Eberhardt, Inc., Irvington, N. J. — Several different types of shapers and gear hobbing machines were displayed. Shapers exhibited were: A 32 in. industrial shaper (illustrated), a 14 in. plain tool room universal shaper, and a 20 in. industrial universal shaper, all equipped with regular box tables or universal tables, automatic tool lifters, power downfeed to tool head, and both single and double-screw vises. These shapers feature 16 ram speeds and all-helical gear drives. A new, electrified line of gear hobbers, models 12H, 24H (illustrated) and 48H, suitable for cutting spur gears, helical gears either differentially or nondifferentially, and worm gears by the infeed method was featured. The machines can be arranged for hobbing splines or worms with few teeth. A model 30TWG tangential worm gear hobber represented a line of machines for intensive production of single and multiple thread worm gears.

G. A. Gray Co., Cincinnati — A new 6-in. horizontal boring, drilling and milling machine with 24 speeds for the single spindle and a speed range from 2½ to 900 rpm; a new 30 in. x 8 ft openside planer with table speeds up to 300 fpm; a new 42 in. x 42 in. x 10 ft double housing planer with table speeds up to 300 fpm (illustrated); and a new unit milling head for a planer-type milling machine featuring a 25 hp spindle motor with spindle speeds from 10 to 500 rpm were exhibited.

Greenlee Bros. & Co., Rockford — A new hydraulic way-type unit for special drilling and boring operations; a new type lead screw feed for the Greenlee automatic screw machine; a six spindle automatic screw machine arranged with the new lead screw; a six spindle automatic arranged to handle secondary operations; and a special tapping unit with hydraulic feed made up this exhibit. The new drilling and boring unit can be furnished with strokes from 18 to 30 in., and functions include rapid approach, variable feed, delayed dwell, and rapid return.

Hall Planetary Co., Philadelphia — Two Hall Planetaries for high production, precision thread and form milling; the Planatester, an instrument for determining toughness of hardened steels such as high speed steels and used in connection with a hardness tester; and the Hall standard arbor, a new arbor with two locating diameters, were exhibited. The Planetary (illustrated) will mill internal and external threads simultaneously. The threads can be different pitch and different hand, or a combination of a thread and circular forms can be milled simultaneously. The work does not revolve or move when milled.

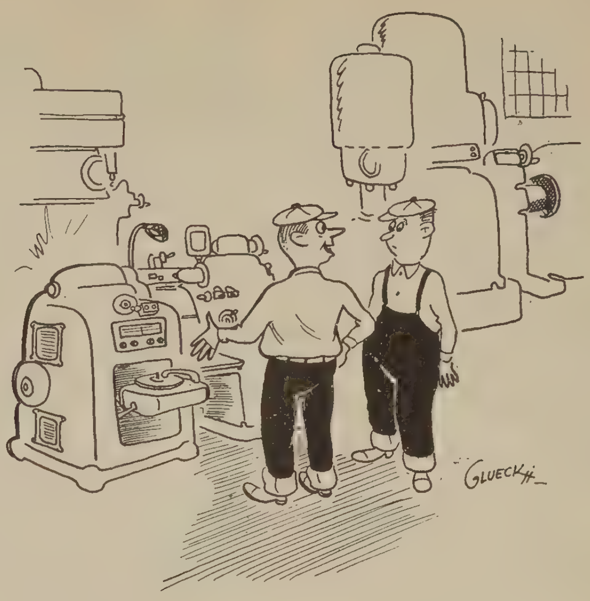
Hanchett Mfg. Co., Big Rapids, Mich. — Automatic production surface grinders, duplex rotary surface grinders, a double spindle grinder, a reciprocating table surface grinder and various magnetic chucks were shown.

Hannifin Corp., Chicago — A 25-ton hydraulic straightening press (illustrated) for use on crankshafts, camshafts, axles, lathe spindles and other heavy parts after heat treating; a 5-ton bench type hydraulic press for high speed press assembly, punching, piercing and similar work; a sensitive pressure control; a 35-ton portable hydraulic riveter; a 17½-ton portable hydraulic punch; a 12½-ton utility press; a hydraulic multiple piercing unit; hydraulic pressure generators; a pneumatic arbor press; a 50-ton air operated platen press; and various hydraulic and pneumatic cylinders and air control valves were shown.

Hanson-Whitney Machine Co., Hartford — Semi-automatic thread milling machines; a rapid centering machine; oil groove planing attachments; ground thread taps; various types of multiple head cutters; thread gages and lead screws were exhibited.

Hardinge Bros., Inc., Elmira, N. Y. — For production departments, three multi-operation chucking machines; three high speed precision second operation machines; collets, feed fingers, circular cutoff tools and circular form tool sharpening fixtures for all types of automatic screw machines and turret lathes were displayed. For tool rooms, a tool room screw cutting lathe, precision lathes, plain and universal milling machines, a vertical milling machine, tool room accessories, lathe collets, speed collet chucks, and collet index fixtures were shown.

R. G. Haskins Co., Chicago — A representative line of the flexible shaft equipment manufactured by Haskins; working exhibits on both weld grinding and die sinking with attachments and accessories that can be used; a line of screwdriving and nut setting equipment in flexible shaft and direct drive; and various high speed and carbide tipped cutters were displayed.



"BOY THIS NEW JOB'S GOT EVERYTHING—RADIO-PHONOGRAPH, AUTOMATIC CLUTCH, ELECTRONIC CONTROLS—"

Heald Machine Co., Worcester, Mass. — Three new lines of Heald machines, internal and surface grinders and Bore-Matics, were exhibited. Ten Bore-Matics, nine of which were new; a new tool sharpener; three surface grinders, two of new design; and seven internal grinders (six of which are new) including the Gage-Matic, Size-Matic, combination and plain internal grinders, and centerless internal grinders were on display.

Hendy Machine Co., Torrington, Conn. — An 18 speed, geared-head, metric tool room lathe, 18 speed, geared-head tool room lathes; tool and gage makers' lathes; a 12 speed geared-head tool room lathe; a general purpose lathe; a 12 speed manufacturing lathe; a high speed turning lathe; a high speed tool room crank shaper; and a heavy duty tool room crank shaper were exhibited.

Henry & Wright Mfg. Co., Hartford — The new 25-ton Speedmaster dieing machine (illustrated) was featured at this display, along with the standard 50-ton dieing machine, a two-spindle class R drilling machine, a No. 2 automatic power straightener, automatic drum type reels, and a collection of flat, drawn and formed stampings.

Holo-Krome Screw Corp., Hartford — This exhibit was a comprehensive display of Holo-Krome socket screw products and the new flat head socket cap screw.

E. F. Houghton & Co., Philadelphia — Four new series of Cut-Max straight cutting oils, Hydro-Drive hydraulic oils, Sta-Put lubricants, Kensington spindle oils, Sta-Put greases and absorbed oils for ball and roller bearings, a line of leather and synthetic hydraulic packings and Vim-Tred leather belting for heavy duty use were exhibited.

Hyatt Bearings Div., General Motors Corp., Harrison, N. J. — The Hy-Load line of high capacity cylindrical roller bearings were exhibited and examples of how these and other types of Hyatt roller bearings can be applied to machine tools were shown.

Hydraulic Press Mfg. Co., Mt. Gilead, Ohio — The new Economy press, the first inclinable hydraulic press featuring an open back with a capacity of 50 tons; a new 150 ton zinc die casting machine; and the 200 ton CU-3 metal working press equipped with blankholder and die cushions were exhibited. There was also shown a full line of products of HPM's subsidiary, Hydro-Power, which included hydraulic pumps, valves, cylinders and a new Hydro-Power automotive power unit.

Hy-Level Screw Products Co., Cleveland — The Hy-Level liquid pressure bar feed attachment for automatic screw machines was displayed. This attachment eliminates feed tubes, feed fingers, ball races, silencers, extended pusher rods and other extras on certain types of automatics.

Ideal Industries, Inc., Sycamore, Ill. — Live centers, unit type dust collectors, and electric etcher, a portable blower, demagnetizers, and the electric Thermo-Grip solder tools were displayed. Operating on resistance heating principle, the Thermo-Grip is adaptable to practically all soldering applications. Three models, 450, 1000 and 2500 watts, are available.

Illinois Gage Co., Chicago — Torqueless, impact, portable nut runners were shown.

Illinois Tool Works, Chicago — A new fine pitch gear generator, a new Toolgraph chart, a die filing machine, gear checking machines and Illinite metal cutting tools were exhibited. The Toolgraph chart shows at a glance any deviations of hob teeth from the theoretically desired lead helix.

Independent Pneumatic Tool Co., Chicago — New Thor pneumatic impact wrenches were featured, along with other types of pneumatic and electric tools for production and maintenance made by this company. The new Thor wrenches are available in five sizes for driving and removing nuts, bolts, cap screws and self-tapping screws from ⅜ to 1¼ in.

Ingersoll Milling Machine Co., Rockford, Ill. — A 40-ton vertical spindle milling machine (illustrated) was in operation milling cast iron, steel forging billets and die-block steel. It was designed for carbide milling, and was using carbide tipped Shear Clear cutters. Also shown were the Ingersoll power packs, a precision measuring instrument by which cutters may be set to limits of 0.001 in. without the use of dial indicators or Jo-blocks, various types of Ingersoll cutters, and ⅛ scale models of some 20 machines recently built. One of the show highlights was the 9-ton milling cutter, 7½ ft diam, used on an 800 hp aluminum ingot scalping machine.

Jacobs Mfg. Co., Hartford — The company's full line of plain bearing key type chucks, ball bearing super chucks, Rubber-Flex tap chucks and plain bearing headstock chucks was exhibited. A new item shown was the keyless impact chuck designed for quick changing of twist drills and another was a new application of the Rubber-Flex collet, as applied to machine tool chucking devices.

Chas. L. Jarvis Co., Middletown, Conn. — The new Torquomatic, a torque-drive tapper, and a newly acquired line of taps and dies were exhibited. Quick change chucks and collets, and high speed and tungsten rotary files were also shown.

Johnson Bronze Co., New Castle, Pa. — Exhibited was Johnson's regular line of sleeve type bearings, including cast bronze in any alloy, plain or graphited, rolled bronze, bronze on steel, babbitt lines with bronze or steel back, and the pressed powdered metal self-lubricating type.

Jones & Lamson Machine Co., Springfield, Vt. — Turret lathes, universal ram and saddle types for bar and chucking work; Fay automatic lathes; double end milling and centering machines; automatic thread grinders; automatic opening thread dies and chasers; ground thread flat rolling dies; optical comparators, and carbide cutting tools were exhibited.

Kaukauna Machine Corp., Kaukauna, Wis. — Showing equipment that has been on the market only a short time, Kaukauna exhibited a No. 125U portable universal tapping and drilling machine; the 125HR portable horizontal drilling and tapping machine; the No. 700 indexing table; the No. 1030 portable horizontal drilling and tapping machine, and a new line of tools known as the Kwik-Size boring tools.

Kearney & Trecker Corp., Milwaukee — Exhibited were 28 milling and precision boring type machines in operation, featuring new designs and demonstrating eight refinements in machine tools and their method of operation. Featured were samples of the Model CSM line, high horsepower knee-type milling machines with an automatic cycle feature for table movement, combining the advantages of both knee and production type milling machines. The automatic cycle feature will be provided on the company's entire line of standard knee type millers. One of the line of knee type milling machines having automatic table cycle control is model 4H (illustrated), which has a feed range of ½ to 30 in. and a speed range of 20 to 1000 rpm with a 10 hp motor.

Kennametal, Inc., Latrobe, Pa. — Displayed were a new line of mechanically-held tools having a solid cylinder of Kennametal clamped vertically in a steel holder; single point tools with advanceable, clamped-on Kennametal blanks; solid carbide boring tools; Kennamills having wedged-in or tipped blades; roll turning tools having screwed-on or clamped-on tips; balls for hole sizing, check valves, and hardness testing, and carbide rolls for cold rolling steel, aluminum and other metals.

Kent-Owens Machine Co., Toledo — A hand milling machine with hand lever feed, a hydraulic milling machine with hydraulic feed, hydraulic milling machines with automatic cycle, a double spindle hydraulic milling machine with automatic cycle, and a vertical milling machine with automatic cycle were exhibited. Model 1-14 (illustrated) has an automatic index fixture mounted on the table, and model 2-20 was arranged with an automatic air actuated fixture for holding small parts while milling flats or grooves.

King Machine Tool Co., Cincinnati — A heavy duty 52-in. vertical boring and turning machine (illustrated) equipped with right hand swivel turret, left hand swivel ram head on rail, and a right hand side head, four position tool holder, and adjustable speed motor drive was featured at this exhibit. Also shown were a heavy duty vertical boring and turning machine equipped with right hand swivel turret head on rail, right hand side head with four position tool holder, and Sebastian engine lathes with eight speed, geared heads.

Kingsbury Machine Tool Corp., Keene, N. H. — Two automatic indexing machines were exhibited. One machine (illustrated), electrically controlled, demonstrated 14 operations on three faces of work. It has 14 automatic units, and a 60-in. automatic index table with 12 chucks. When the table indexes, every chuck rotates 180° permitting four of the horizontal units to operate on one face of the work, the other four horizontal units to operate on the opposite face, and six vertical units on a central column can work on the third face. The second machine drills, spotfaces, counterbores mills, reams and taps brass heat regulator forgings at the rate of 7 per min.

W. B. Knight Machinery Co., St Louis — Three vertical milling and precision boring machines were shown. The No. 50 miller is a new solid base type machine for vertical milling and precision boring (illustrated). The Elec-Tro Mill has an electronic drive, offering infinitely variable speeds and feeds for the table and spindle. A new 20-in. diam, self-contained power feed, rotary table, with pick-off gears giving 18 feed changes, was also shown.

Kropp Forge Co., Chicago — A representative line of hammered and drop forgings produced by Kropp was shown.

Landis Machine Co., Waynesboro, Pa. — Thread grinders, thread rollers, four spindle semi-automatic threading machines, a ⅜-in. single head threading machine, and the Lanroll attachment for automatic screw machines and turret lathes for screw thread generation were exhibited. The Landis thread rolling machine (illustrated) will roll screw threads, knurls, and other markings on cylindrical parts. A new feature of the machine is that it will roll threads on several diameters of work in a single pass. Circular dies are used with a work support interposed between them. The centerless thread grinder will grind screw threads on straight cylindrical parts or on headed or multiple diameter parts. A through feed method is used for single diameter work, whereas an infeed method is used for headed or shouldered work. Thread accuracy is maintained by an automatic crush wheel dresser mounted on the machine.

Landis Tool Co., Waynesboro, Pa. — Some 16 Landis grinders were exhibited, including the 12x28 in. universal and tool grinder; 10x20 in. type H hydraulic universal; 12x36 in. LCH hydraulic universal; 12x48 in. LCH hydraulic universal; 4x12 in. type H valve face grinder; the No. 12 centerless; the No. 2 Race-A-Way for grinding bearing faces; the new 5x40 in. type DH cam contour grinder (illustrated); the new 16x42 in. crank pin grinder; the new 14x96 in. type F plain hydraulic grinder, and the new 10x36 in. type CH plain hydraulic grinder. Many new features have been incorporated in the last four described machines. These grinders were equipped and operating with various accessories such as swinging bracket type internal fixtures, hydraulic infeeds and timers, profile dressers, visual-automatic sizing devices, magnetic filters, Precipitron air cleaners, and a vibrating type loading mechanism.

Sidelights of the Show

Total shipments of machinery into the show consisted of 164 freight cars and 9651 trucks carrying machines. Total weight of this machinery was 15,621,117 lb.

Despite rumors to the contrary, no one was killed at the show, although one man died of natural causes.

Actual machining operations conducted at the show resulted in 290,000 lb. of turnings and borings of aluminum, brass, cast iron and steel.

Total connected load on the electric lines for driving the tools was 11,856 hp.

The new Tucker car, displayed in an area off the main show section, earned some new admirers, but the problem of how to change a rear tire still puzzles most of us.

An exhibit of WAA surplus machines, shrouded in protective coating, presented a drab and uninteresting comparison with the bright, attractive new equipment of the machine tool makers.

Langelier Mfg. Co., Providence, R. I. — This exhibit consisted of a way type and automatic indexing machine for various drilling and tapping operations, automatic positive cam-feed drilling units, lead screw feed tapping units, and swaging machines.

Lansing Engineering Co., Lansing, Mich. — This exhibit was a demonstration of Lectro-Count, an electronic instrument engineered for counting and recording operations performed or pieces produced on any ac electric motor-driven machine. A holding time delay circuit makes it possible to combine several definite and distinct operations on multiple operation machines into one continued sequence so that only one count is obtained for the total operations on one piece.

Lapointe Machine Tool Co., Hudson, Mass. — Six of its latest broaching machines, two large and two small verticals and one large and one small horizontal, were exhibited by Lapoint. The machines were: Model HP-5, 2½ ton, 30 in. stroke horizontal hydraulic pull; model fpc, 2½ ton, 18 in. stroke vertical hydraulic push; model DRV, 5 ton, 54 in. stroke, double ram vertical hydraulic surface; model HP-15, 7½ ton, 48 in. stroke, horizontal hydraulic pull; model SRV, 15 ton, 66 in. stroke, single ram vertical hydraulic surface, and model V-3, special 20 ton, 42 in. stroke, vertical hydraulic pull down. The machines were tooled to produce various contours, grooves, slots, and holes in a variety of parts. Model V-3 (illustrated) performs work in which the center distance between simultaneously broached holes must be held. With its rotor cut broach, it can cut multiple holes and hold their center distances to within 0.0005 in. of each other.

La Salle Steel Co., Chicago — Parts made from Stressproof steel, a cold finished carbon bar steel, of high strength, free machinability, and minimum warpage characteristics were shown. Also shown were parts made from La-sulphite 8640 steel.

R. K. LeBlond Machine Tool Co., Cincinnati — Four new and nine other lathes, accessories and attachments, and numerous demonstration units made up this exhibit. The 16 in. model RT heavy duty lathe (illustrated) is a combination gear-belt drive lathe with a single lever controlling 16 spindle speeds from 20 to 1025 rpm or 30 to 1537 rpm. Equipped with a variable speed headstock, it offers an unlimited number of spindle speeds from 6 to 1500 rpm. The new 25 in. heavy duty engine lathe is the first of its type and size to be built with a totally enclosed and automatically lubricated quick change box. From a direct reading plate, 48 changes of feeds and threads may be obtained without change gears. It has 16 spindle speeds from 6.5 to 400 rpm, or 10 to 600 rpm. The Dual Drive lathe (illustrated) is a combination gear-belt drive headstock lathe with a single lever controlling 12 spindle speeds from 28 to 1800 rpm and 48 feed and thread changes. Also shown were LeBlond's 13x3 in. bench Regal; 15x42 in. Regal floor model; 17x42 in. Regal, 21x60 in. Regal, 13x60 in. rapid production lathe; 14x30 in. tool room lathe; 40x156 in. heavy duty engine lathe; 25/50 in. x 14 ft 7 in. sliding bed gap lathe; 6AC automatic crankshaft lathe, and the No. 2 cutter grinder.

Lees-Bradner Co., Cleveland — Production gear hobbing machines, universal thread milling machines, a new ultra-speed gear hobber, and an electric hob shifter were shown. The 7-A eight spindle rotary (illustrated) is built in four types, single, 4, 6, and 8 spindle rotaries. Each spindle can be tooled for a different job, being independent of each other. A patented rapid traverse differential eliminates for rapid traverse clutches. Two thread millers, models 40 and HT, were exhibited. Both are semi-automatic, whereby the cutter is automatically fed in to the required depth against a positive micrometer stop, fed across the face of the part being threaded and withdrawn. Model HT can be arranged with the new automatic cycle but is fully universal and will handle both ring or hob type work as well as single cutter or disk type thread hobs.

Lehmann Machine Co., St. Louis — Exhibited were a 16 in. Electronic-Hydratrol motor driven for demonstration of sustained horsepower over a full range of spindle speeds from normal minimum to 1800 rpm; an 18 in. new type engine lathe Electronic-Hydratrol motor driven for new feature demonstration; a 30 in. Hydratrol lathe (illustrated); a 30 in. large hollow spindle headstock with cover removed; a 30 in. Hydratrol headstock, interior exposed, and other assemblies of Lehmann lathe components. Also shown were block type boring bars, fly cutter bars, micrometer fly cutter bars, car wheel type bars, micrometer adjustable blocks, and a selection of regular blocks, all products of the company's Boring Tool Div.

Leland-Gifford Co., Worcester, Mass. — Exhibited were a 12-in. single spindle drill with hydraulic feed tooled with hydraulically operating jig producing pieces; a 20-in. three spindle motor spindle drilling machine with high speed spindle and tapping attachment; a multiple adjustable spindle drilling machine with 16 spindles have speeds up to 4500 rpm and hydraulic feed table operation; a rail type drilling machine with two spindles having hydraulic feed with step by step control and equipped with hydraulically operated drilling fixture for drilling angular oil holes in crankshaft, and a No. 4 motor spindle drilling machine with hydraulic feed. Also shown were: A single spindle horizontal drilling machine with hydraulic feed and equipped with a fixture for drilling a series of deep holes; a No. 4 self-contained hydraulic feed drilling unit for drilling predetermined amounts of material and equipped for quick depth setting; a 20-in. two spindle drill with hydraulic feeds and an automatically operated hydraulic indexing table; a 20-in. two spindle with hydraulic feeds and quick clamp fixtures for drilling lubricating holes, and a 14-in. four spindle drilling machine with one power feed, and on which two spindles are arranged for different methods of tapping.

Lempco Products, Inc., Bedford, Ohio — Featured was the new Hypermatic high speed punch press with rotary die motion. Also displayed were anti-friction die sets, a multi-purpose grinder, a horizontal disk type surface grinder, an electric Pressurematic utility press, a hydraulic Pressurematic utility press, a dual spiral adjustable alignment machine, and chucking reamers.

Liberty Planers, Inc., Hamilton, Ohio — The new 60x60 in. by 20 ft capacity double housing planer (illustrated) represented the complete line of Liberty double housing, convertible, and open side planers. Despite its size, it is designed to handle precision work, having micrometer adjustments reading in thousandths on all vertical and horizontal feed rods.

Lift Trucks, Inc., Cincinnati — The new Hydrolectric K model lift truck with twin front wheel drive and differential gears mounted for 180° steering action was featured. The truck has power lift, hydraulic automatic lowering, two speeds forward and reverse, and batteries for 24 hr service. In addition, a full line of lift trucks, both hand and electric, for pallets and skid platforms was shown.

Link-Belt Co., Chicago — A complete line of power transmission equipment consisting of Electrofluid drive; motorized speed reducer; P.I.V. gear, a speed changer; ball and roller bearings; silent chain drives; roller chain drives; flexible couplings, and other accessories were displayed.

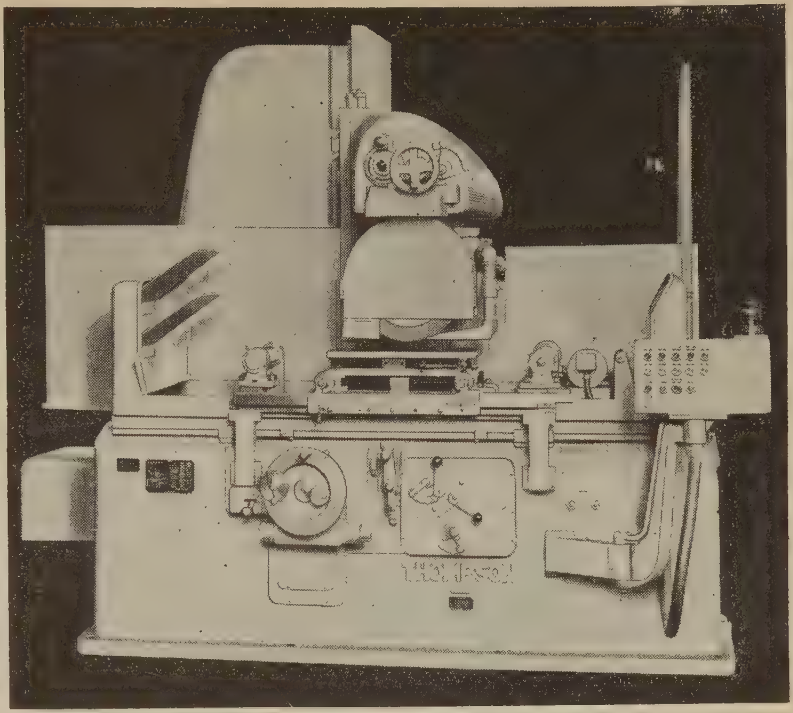
Lipe-Rollway Corp., Syracuse — A mechanical Carbo lathe and attachments were exhibited.

Lodge & Shipley Co., Cincinnati —The new Model X 14 in. and 16 in. lathes featuring a 24 speed headstock and three ranges of spindle speeds, a totally enclosed quick-change gear box, and automatic lubrication were exhibited. In addition to the smaller sizes, the entire line of Model X lathes were shown, including the 16x54 in. model X (illustrated) centers selective head manufacturing lathe for small lot production; the model X 20x72 in. centers selective head oil country lathe with an 8 9/16 in. hole through the spindle and 21 in. four-jaw independent chucks on each end of spindle; the model A lathes; a No. 1 full universal saddle type turret lathe, and a No. 5W way type turret lathe. A new 2A Duomatic (automatic) lathe with a simplified headstock providing spindle speeds ranging up to 2000 rpm using a 30 hp motor, and a No. 1 cross-sliding, hollow-hexagon, full universal turret lathe with a Duplimatic attachment controlling the turret were also displayed.

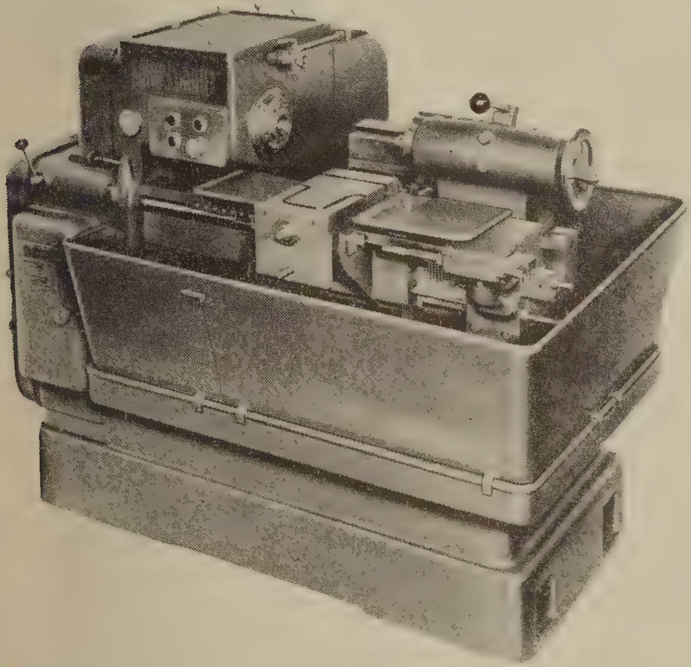
Logansport Machine Co., Inc., Logansport, Ind. — Shown was a standard line of equipment consisting of hydraulic and air valves, cylinders, presses, power chucks and rotating cylinders. A new line of air valves was displayed.

Lovejoy Tool Co., Inc., Springfield, Vt. — Face milling cutters in diameters from 2½ to 24 in., featuring interchangeable and positive locking blades; a new Cutsall milling cutter line featuring tool bit type carbide blades for positive and negative rake cutting; other standard and special tools, and the new carbide tipped end mills and holders were exhibited.

Lucas Machine Tool Co., Cleveland — Featured was the Lucas 41, a 3-in. spindle horizontal boring, milling and drilling machine, along with the new Lucas 460 Electronic, 4-in. spindle machine. As a companion, the Lucas 460 was shown with electrical controls. While electric controls have been used on the Lucas 5-in. spindle machine, this is the first 4-in. spindle to be equipped with them. The four-way bed construction is one of the outstanding features of the 460 machine. The Lucas 41 (illustrated) is an improved machine with high-low speeds to the single spindle and electrical pendant control.



• • Thompson Thread Roll Grinder



• • Sundstrand Model 4 Automatic Lathe

Lufkin Rule Co., Saginaw, Mich. — Exhibited was a complete line of machinists' and precision measuring tools, along with measuring tapes.

Macklin Co., Jackson, Mich. — Grinding wheels and abrasive products made by Macklin were shown.

Madison-Kipp Corp., Madison, Wis. — A line of pneumatic tools and lubricators was shown.

Mall Tool Co., Chicago — Pneumatic and electric metal cutting saws, electric drills, electric screwdrivers, electric sanders and polishers, and pneumatic and electric grinders were exhibited.

Marlin-Rockwell Corp., Jamestown, N. Y. — Ball and roller bearings, featuring the new Synthe-Seal ball bearings equipped with seals on either or both sides, were shown. The seal is removable, made of an elastic material with a steel core, which effectively excludes dirt, grit, moisture and other substances harmful to bearings.

Master Mfg. Co., Hutchinson, Kan. — A Master lathe converter that can be used as an independent unit or in conjunction with lathes, milling machines, boring mills, shaper and planers, for keyway milling both internal and external, thread milling, spline milling, gear cutting, boring, drilling, circular milling, grinding, etc., was featured. A 40 to 1 geared dividing head for lathes permits all types of precision indexing. The converter is made in three sizes to fit lathes from 9-in. to 60-in. swing, and has 24 spindle speeds for milling and 12 for grinding.

Matco Tool Co., Chicago — A radii and angle wheel dresser; an all-angle vise, a swivel milling vise, a universal collet head (illustrated); a universal drill jig; a universal angle plate, and an instant grip cam vise were shown.

Mattison Machine Works, Rockford — Exhibited were a 12x36 in. high powered precision surface grinder with hydraulic feeds; a 24x96 in. high powered precision surface grinder (illustrated) with hydraulic feeds and a No. 455 wide belt sheet grinder and polisher. Mattison surface grinders are built with table sizes ranging from 12 to 36 in. wide x 36 to 192 in. long. Wheel heads adjust vertically between table surface and wheel to allow from 16 to 24 in., depending upon the size of the machine. These machines have double column support for the wheel-slide assembly.

McGill Mfg. Co., Valparaiso, Ind. — In addition to the McGill ball and Multirol bearings, there was featured a new Multirol cam yoke rolling bearing designed to increase the adaptability of Multirol cam follower applications where mounting of the roller unit is desirable on a shaft rather than by the conventional stud.

Merz Engineering Co., Indianapolis — The New-Matic line of measuring machines, comparators, and taper gages; selector switches; an automatic checking and sorting machine; plug and ring gages; snap gages; a universal checking plate fixture, and experimental work were shown.

Michigan Tool Co., Detroit — The Orlandi gear checkers along with a new 12-in. model; a new line of fan-cooled, Cone Drive speed reducers; a new line of crossed-axis rotary gear finishers represented by the 870-A Underpass; the new Shear-Speed gear cutter, and the Sine-Line involute checker with recorder were exhibited. The 870-A Underpass gear finisher permits selection of any of three different methods of gear finishing: Underpass shaving, in which the work moves tangential to the cutter; Transverse shaving, in which the work is reciprocated axially while the feed is radial, and Traverpass shaving, a new development representing a combination of Underpass and Transverse shaving.

Micromatic Hone Corp., Detroit — A variety of single (illustrated) and multiple spindle Micro-Honing Machines, honing tools and abrasive sticks were displayed. Model 721, a vertical machine of quill type unit construction, is new and was tooled to externally hone refrigerator pistons to a tolerance of 0.003 in. Model 722 is a new vertical quill type, single spindle machine, adaptable to honing bores up to 2 in. diam and 8 in. long. Model 723 is a new quill type single spindle made for work range from 0.250 to 1 in. diam and 6 in. long. This machine has an automatic cycle. Model 728, another quill type machine, was tooled and fixtured to hone a four cylinder block with a 2½ in. bore. This single spindle machine bores up to 4 in. diam by 7 in. in length, to a tolerance in bore size of 0.0003 in. or less. Other new models shown were single and multiple spindle machines for general purpose and special work.

Moline Tool Co., Moline, Ill. — The No. HF9 straight line driller with spiral drive to 22 drill heads (illustrated) which may be adjusted for spacing along the length of driving spiral was exhibited along with a No. HU68 universal joint type driller with 10 drill heads driven through universal joint spindle arms of new design; the No. 115FB precision cylinder boring machine equipped with four unpiloted spindles and automatic retracting boring heads, and the No. MR127 two-spindle horizontal machine arranged to drill holes in the ends of railroad track sections for splice bars or fish plates.

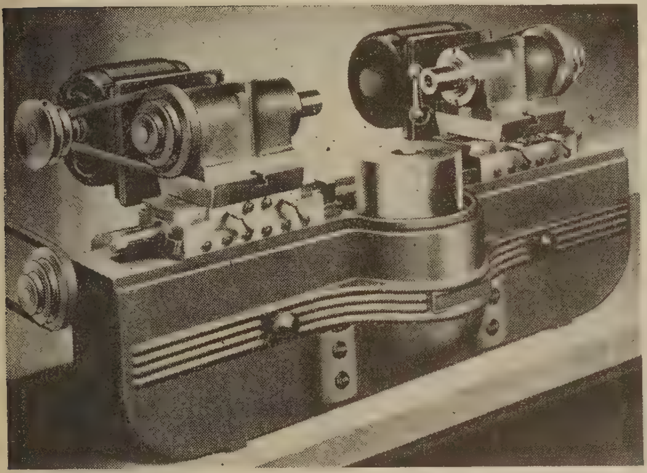
Monarch Machine Tool Co., Sidney, Ohio — Monarch had 30 turning machines at the show ranging from sensitive precision toolmakers' lathes through heavy engine lathes. A new Speedi-Matic, high production, hand screw machine (illustrated) had an automatic electronic system for selecting and controlling feeds and speeds. A 10 in. precision manufacturing lathe had a turret equipped to operate high speed air drills in two of its six stations (illustrated). A 10 in. high speed manufacturing lathe had an Air-Tracer that turned an unusual irregular contour at high speed. The Model C, 12x30 in. engine lathe was equipped to simultaneously turn three angular faces. Several lathes had Keller controls for boring and facing contours simultaneously.

Morton Mfg. Co., Muskegon Heights, Mich. — A new 18-in. stroke keyway cutter and slotting machine (illustrated) and a new high duty draw cut flash trimming machine were featured at this exhibit. Also shown were finished machine keys and photographs of Morton's draw cut machine tools. The keyway cutter and slotting machine is hydraulically driven and made in 18 and 24 in. strokes. Automatic feeds are provided, giving a variable rate of incremental feed from 0.001 to 0.020 in. per stroke. The cutting speed range is from 10 to 25 fpm.

Nathan Mfg. Co., New York — Exhibited were force feed, mechanical lubricating, piston type pumps and accessories.

National Acme Co., Cleveland — Three Acme-Gridley multiple spindle bar automatics, the new 1¼ in. RB, six-spindle (illustrated) running on a fast cycle brass job; the 1⅝ in. RB, eight-spindle on bit, brace, and chuck, and the 4¾ in. RB, four-spindle, on a bearing race made from steel tubing, were shown. Three Acme-Gridley single and multiple spindle chucking machines, the 6 in., RPA, eight-spindle, on double semi-steel castings; the 12 in., RPA, six-spindle, on inner roller bearing races, and the new 12 in. Chuck-Matic single spindle chucking machine on SAE 52100 tubing for ball bearing races were shown. The new TR, a 1 in. Roll-Matic hydraulic three roll type thread and form rolling machine was in production on 7/16 in. standard studs. Also exhibited were self-opening die heads, hollow milling heads, ground thread circular chasers, adjustable blade chasers, collapsible taps, a tool grinder, snap lock limit switches, line voltage switches, and other electrical equipment.

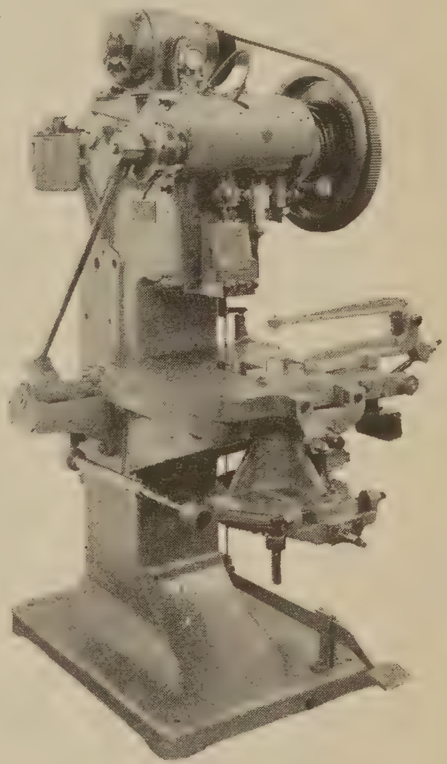
National Automatic Tool Co., Richmond, Ind. — Exhibited were a Borface machine for combination boring and cross facing; a horizontal deep hole drilling machine; a combination drilling, facing and tapping machine; a vertical multiple spindle drilling and tapping machine; a vertical multiple spindle sensitive tapping machine with air-operated table feed; a vertical multiple spindle drilling and tapping machine with hydraulic table feed; a vertical cam feed unit; a hydraulic feed self-contained drilling unit and a floor type unit, and a lead screw multiple tapping unit. The A-65 cam feed units (illustrated) are readily made up into special station type machines. This machine has produced more than 400 parts an hr, loading two parts at a time and completing the cycle in 18 sec automatically.



• • Taylor & Fenn Drilling and Milling Machine

National Broach & Machine Co., Detroit — This display consisted of standard gear shaving machines, a diagonal gear shaving machine, a rotor shaving machine, a gear lapping machine, a gear sound testing machine, gear checking machines, Naloy broaches, and tooling. Featured was the electric motor rotor shaving machine, the RotoShaver, on which laminations of motor rotors are finished from the rough in one operation by combining the use of a fine pitch high precision cylindrical milling cutter operating at high speed, the principle of crossed-axes shaving, and the principle of diagonally traversing the work across the cutter in order to spread cutter wear uniformly over its full face. The result is reported to have accuracy comparable to grinding.

National Machinery Co., Tiffin, Ohio — A 3.6 in. automatic hollow rivet header, new in principle; a new design ¼ in. double stroke solid die cold header; a ⅜ in. boltmaker; a 5/16 in. automatic cold nut former, new in principle; a ⅜ in. automatic high speed precision nut tapper, shown for the first time; a 1 in. high duty hot forging machine, and the No. 1½ high speed forging Maxipress made up this exhibit. The ¼-in. double stroke solid die cold header was in production on heading Phillips screws. The 5/16 in. automatic cold nut former (illustrated) was producing ⅜ in. SAE nuts at the rate of 100 per min. It makes single chamfered, washer-faced nuts, and other standard and special type nuts. Round stock is fed from a coil and a finished nut, ready for tapping, is produced on every stroke.



• • V&O High Speed Notching Press

○ ○ ○

New Britain-Gridley Machine Div., New Britain Machine Co., New Britain, Conn. — Automatic six spindle screw machines; a double end rotating chucking machine; a single spindle automatic turret lathe; a two spindle contour type boring machine; four, six, and eight-spindle work rotating chucking machines; a three and a four-spindle tool rotating chucking machine were exhibited. Model 601 (illustrated), a 1¼ in. machine, weighs 16,000 lb, and will run between 4000 and 5000 rpm spindle speeds on aluminum and brass. Cross slide camming without deflection is achieved by the use of heavy duty forming slides with the cams directly behind the slides. A program wheel shows the operator where the high points of both cross slides and main tool slide are, and where the high and low speed cycles of the machine begin and end.

New Departure Div., General Motors Corp., Bristol, Conn. — This exhibit shows examples of the various types of ball bearings used in machine tool construction.

C. A. Norgren Co., Denver — Hydraulic hose couplings and pneumatic regulating and reducing valves, compressed air filters, compressed air lubricators and special air-oil fog lubricators were shown.

Norma-Hoffmann Bearings Corp., Stamford, Conn. — Ball and roller bearings, thrust bearings, and the Norma-Hoffmann cartridge type sealed bearings were exhibited.

Norton Co., Worcester, Mass. — The newly designed 6 and 10 in. type CTU cylindrical grinders; the new No. 12 Simplex surface finishing machine; the Seal-O-Lap lapping machine; the No. 16 FC lapping machine; the 8x24 in. hydraulic surface grinder; the No. 2 Cam-O-Matic cam contour grinder; the No. 20 cutter and tool grinder; the 10x20 in. universal grinder, a new machine, and the radically new No. 2 Bura-Way tool grinder made up the Norton exhibit. The Bura-Way tool grinder (illustrated) is for grinding convex single point tools, such as boring, turning, plunge cut and form tools. The tool bit holder accommodates shanks up to 2 in. square. Relief angles up to and including 15°; positive and negative rake angles up to and including 30°, and back rake angles, positive or negative, up to and including 25° may be ground.

Oakite Products, Inc., New York — Soluble oil for making up coolants for machining, drilling, and wet grinding; addition agents used in cutting emulsions; Bactericide for sterilizing coolant tanks, pumps and lines, and a special protective oil for rust prevention were shown.

Oilgear Co., Milwaukee — The following equipment was exhibited: A 30x54 in. stroke vertical Cyclematic broaching machine; a 10x54 in. stroke double-slide vertical surface broaching machine; a type AHB-33, two way variable speed transmission with a type B-311 constant displacement motor; a type JK-10203 feed pump with associate electric-hydraulic controls; directional control valves, relief valves, foot, combination, and surge valves, and parts broached on Oilgear broaching machines. The double slide vertical surface broaching machine has an entirely new style of operating mechanism for the shuttle tables. The AHB transmission is one of a line of new transmissions, and the feed pump is a new unit.

O.K. Tool Co., Shelton, Conn. — A full and complete line of milling cutters, reamers, boring heads, lathe, planer and shaper tools in high speed, cast alloy, cobalt steel and carbides was shown. A new carbide tipped dual adjustable face milling cutter (illustrated) was shown.

Oliver Instrument Co., Adrian, Mich. — Exhibited were the SP-2 die making machine, a heavy duty die making machine, the Nos. 21 and 510 drillpointers; the standard and heavy duty Ace tool and cutter grinder; the 10-in. and 20-in. template tool bit grinder, both of new design; the new drill point thinner; the No. 2 Arc face mill grinder; and a hydraulic automatic face mill grinder.

O'Neil-Irwin Mfg. Co., Lake City, Minn. — The Di-Acro line of rod parters, benders, notching shears, brakes, radius brakes and shears was exhibited. The rod parter, with capacities up to ⅝ in. diam, is a new machine, as is the notching shear for making angular cuts in sheet steel up to 16 gage.

Orlandi Gear & Machine Co., Detroit — This exhibit of gear checkers was described with the Michigan Tool Co. exhibit.

Oster Mfg. Co., Cleveland — The new Rapiduction automatic cycle lathe for forming, facing and other cross feed operations, having a capacity with standard collet of 1½ in. and a swing over the cross side of 8 in. was exhibited. Also shown were: 601 Rapiduction turret lathe, a bar and chucking machine designed for manual operation; the 6-A Rapiduction power pipe and bolt threading machine with a bolt range of 1 to 4 in. and a pipe range of 1½ to 6 in.; the 704 Wilco pipe and bolt threader with a bolt range of ¾ to 3 in. and a pipe range of 1 to 4 in.; the 572X Rapiduction Junior, a pipe and bolt threading machine; the 562X Tom Thumb, a 2 in. portable pipe and bolt threading machine; the 542X Rapiduction Junior, a 1¾ in. floor type production bolt threading machine; and the 531A Tom Thumb, a 1½ in. portable bolt threading machine.

Owens-Corning Fiberglas Corp., Toledo — Fiberglas silicone insulated, non-ventilated motors; an open type Fiberglas insulated motor; a Fiberglas insulated fractional horsepower torque motor for stall-duty applications; and Fiberglas electrical insulation materials were exhibited.

Parker Appliance Co., Cleveland — Tube couplings, fittings, valves, tubing bending equipment, and compounds were displayed. The new Toobolder is a machine to offer, in a single unit, all possible problems in laying out and servicing flexible tube hydraulic or lubrication systems.

Parker-Kalon Corp., New York — Ground thread socket set screws, size-marked gear grip socket head cap screws, socket pipe plugs, stripper bolts, and hexagon keys were displayed.

Peerless Machine Co., Racine, Wis.—A saw blade grinder and a three speed sawing machine with an automatic feed were exhibited.

Physicists Research Co., Ann Arbor, Mich. — Proficorder, a mechanical-electronic shop instrument that provides a magnified chart record of the shape, height and spacing of surface regularities; the BAA Anderometer, a high speed shop instrument for getting an overall quality rating of assembled ball bearings; the WAA race tester for measuring the surface waviness of inner and outer ball and roller bearing races; and a rotary piloting fixture for circular tracing with the Profilometer were exhibited.

Pines Engineering Co., Aurora, Ill. — A full automatic hydraulic bending machine (illustrated) was exhibited in operation, bending steel tubing on a production basis. Recent improvements have increased the operating speed and reduced maintenance.

Pioneer Pump & Mfg. Co., Detroit — A comprehensive display of this company's Pioneer impeller type pumps and the Rollway positive displacement pumps was shown. There are nearly 400 models and capacities of Pioneer coolant pumps with capacities from 2.4 to 174 gpm.

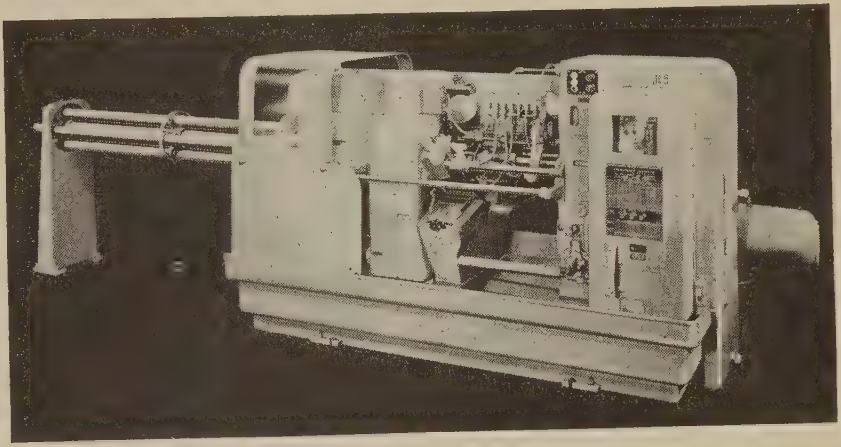
Plan-O-Mill Corp., Detroit — The Plan-O-Mill No. 1 planetary milling machine was featured. With the work held stationary and the revolving cutter being fed around the work, large and cumbersome parts can be handled. The machine is equipped for external or internal threading, and threads and mills parts up to 2 in. ID or OD. Also shown were auxiliary equipment, tools, completed parts, and photographs of other Plan-O-Mill form and thread milling machines.

Portman Machine Tool Co., New Rochelle, N. Y. — Two models of the Portman optical comparator and a 1 hp Portman hydraulic variable speed transmission, a new product, were shown.

Potter & Johnston Machine Co., Pawtucket, R. I. — Ten automatic turret lathes, four of which were in full operation and six motorized and wired but not tooled, were exhibited, These machines included the 3U Speed-Flex (illustrated); 3U-HS Speed-Flex; 5D-HS Power Flex; 5D2, a 15 in. Power-Flex, two spindle; 4D-HS, a high speed model; 5DELX Power-Flex, an elevated, long travel model; 5D2, a 9-in. Power-Flex two spindle model; 6DRE single spindle; the 6DRELX, a long travel, extended bed model; and the 8DXT.

Pratt & Whitney, Niles-Bement-Pond Co., West Hartford, Conn. — Two Keller machines, one producing automotive fender and body dies and one producing forging dies and plastic molds; a group of P&W plain and universal die sinkers; several toolroom lathes with special equipment; an automatic centering machine; an automatic turning on centers; precision jig borers with plain and tilting rotary tables; a vertical shaper; a vertical surface grinder; thread milling and hobbing machines; and gear grinding machines were exhibited.

Precise Products Co., Racine, Wis. — A demonstration of cutting hard materials such as steel files and chrome-nickel steel with tungsten carbide Midget milling cutters operating at a speed of 40,000 rpm; portable electric hand tools and accessories, and flexible shaft attachments made up this exhibit.



• • Warner & Swasey Five-Spindle Bar and Chucking Machine

Purolator Products, Inc., Newark — Oil filters for hydraulic and lubricating systems and air filters were displayed.

R & D Toolholder Corp., Paterson, N. J. — Standard and special tool and cutoff holders for lathes, boring mills, planers and shapers were shown.

Racine Tool & Machine Co., Racine, Wis. — Single purpose machines for general maintenance or tool room use up to 6x6 in. capacity; single purpose 6x6 in. production machines; and single purpose 10 in. capacity production type machines; automatic stock feed machines for cutting bar stock of 6x6 in. and 10x10 in. capacities; railway maintenance equipment; hydraulic pumps, valves and controls; and various fixtures and attachments were exhibited.

Reed-Prentice Corp., Worcester, Mass. — This exhibit consisted of a No. 1½ die casting machine for use with zinc, lead and tin base alloys; a No. 12V electronically controlled universal head vertical milling machine which was equipped with a duplicator attachment; a 22V vertical milling machine; a No. 22VS vertical milling machine, equipped with a universal head mounted on a sliding ram and featuring electronic controls for movement of the table and the knee; and a lathe that was used to display a new treatment of bedways.

Reeves Pulley Co., Columbus, Ind. — Six variable speed units in operation, including the Reeves variable speed transmission, Vari-Speed motor pulley, and Vari-Speed Motodrive were exhibited. Mechanical, electrical, and automatic controls were stressed.

Rehnberg-Jacobson Mfg. Co., Rockford, Ill. — Drilling and tapping units; a horizontal boring, drilling, facing and tapping machine; an automatic centering machine; an automatic indexing table; and a needle bearing assembly machine were displayed.

Reid Bros. Co., Inc., Beverly, Mass. — Surface grinders made by the company were shown.

Reliance Electric Engineering Co., Cleveland — Exhibited were ac and dc motors from 1 to 100 hp; V.S. drives applied to machine tools; and a new squirrel cage ac motor line for production line service on machine tool drives.

Republic Drill & Tool Co., Chicago — This exhibit covered the use of high speed shankless and all-flute twist drills.

Rivett Lathe & Grinder, Inc., Boston — New machines exhibited included a precision toolroom grinder, 1024, for internal and external grinding with a range for hole grinding from ¼ to 9 in. diam up to 6 in. deep and cylindrical grinding to 10 in. diam up to 18 in. long; a precision tool room lathe, 1020R (illustrated); a 918S precision cabinet lathe of new design; a 918S turret lathe; and a 1R watchmakers' lathe.

Rockford Machine Tool Co., Rockford, Ill. — A new Hy-Draulic shaper-planer with cutting speeds up to 240 fpm and extreme rigidity; a new 36 in. Hy-Draulic openside shaper; a new ram type shaper (illustrated) built in 12, 16, 20, 24 special, and 24 heavy duty, and 28 in. stroke sizes; heavy duty double-housing and openside planers completely redesigned; and a new line of Hy-Draulic slotters built in 36 and 48 in. stroke sizes were displayed.

Rodgers Hydraulic Inc., Minneapolis — This exhibit included a Whitley No. 12 production press, a 160-ton embossing press, a 150-ton stationary shop press, a 100-ton portable universal hydraulic press. a 60-ton stationary shop press, and a water test and expanding unit.

Roller Bearing Co. of America, Trenton — Cyclops roller bearings, 20th Century bearings, roller followers, heavy duty roller bearing with solid cases, and solid rollers were shown.

Ross Operating Valve Co., Detroit — Pilot operated solenoid controlled valves; a cylinder head four-way valve for gun welder applications; In-Line series of independently controlled solenoid pilot type valves for air, gas or liquids; a new combination foot treadle or hand lever valve; a new four-way hand valve; and a line of air controlled master and pilot valves were exhibited.

Royal Oak Tool & Machine Co., Royal Oak, Mich. — A grinding machine D-S universal fixture for sharpening cutters was shown.

George Scherr Co., Inc., New York — This exhibit consisted of precision inspection equipment, including comparators, gage blocks, snap gages, micrometers and special shop equipment, and an entirely new model optical comparator.

George T. Schmidt, Inc., Chicago — An automatically fed hydraulic power marking machine, a hand marking machine, a tool room indentor, a name plate press, marking tools and machine accessories, and lettering tools were exhibited.

Seneca Falls Machine Co., Seneca Falls, N. Y. — A new automatic Lo-Swing lathe, model AR, featuring an instantaneous tool relief control mechanism, simplified changeover mechanism and preset cams; a new type double end drive Lo-Swing IMP automatic lathe with an automatic loader; a new model CS Lo-Swing automatic drilling and centering machine; the Lo-Swing model LR automatic lathe; and an automatic work driver were exhibited.

Severance Tool Industries, Inc., Saginaw, Mich. — Carbide Midget Mills, tube deburrers, countersinks, drill-reamers, Micro-Mills, and other small tools including a new line of hand and machine carbide files, were displayed.

Sheffield Corp., Dayton — Gear chamfering machines, gear burring machines, form grinders, plunge form grinders, Micro-Form grinders and various crush grinders, along with air gages, the Electrichek and Multichek gages, Electrigage, thread lead measuring instruments, Measuray for X-ray gaging of sheets, sorting machines, threading tools, dies, chasers, die heads and other products were exhibited. A new line of machines that will chamfer, burr, or point gear teeth was represented (illustrated). Eight models are available, six designed for high-speed steel cutters and two for use of carbides.

Sidney Machine Tool Co., Sidney, Ohio — Engine lathes, tool room lathes, and gearing demonstrations of these lathes made up this exhibit.

Size Control Co., Chicago — A line of gages including thread, snap, ring, and Norbide types, and a new centerless lapping machine were displayed.

SKF Industries, Inc., Philadelphia — Ball and roller bearings, cutaway models of precision bearings, mountings on machine spindles and a new oil mist lubricator were shown.

Smith & Mills Co., Cincinnati — Hisey grinders including snagging, drill, pedestal types; a 25-in. shaper with new features; a slotless shaper ram; and worm feed index centers were exhibited.

Socony-Vacuum Oil Co., New York — Cutting oils, hydraulic oils and lubricants were shown.

Springfield Machine Tool Co., Springfield, Ohio — A geared head engine lathe with a hydraulically operated profile attachment; a tool room lathe, an engine lathe fitted with a step turning attachment, a jig grinder, and a jig mill with rotary milling and grinding head were exhibited.

Square D Co., Industrial Controller Div., Milwaukee — A panel showing automatic cycle control; special control panels for ac and dc systems; resistance welder controls; control components including ac and dc contactors, relays, timers and other electrical equipment were shown.

Standard Oil Co., Indiana, Chicago — A complete line of cutting oils, coolants, drawing and stamping compounds, hydraulic fluids, lubricating oils and greases was shown.

Staples Tool Co., Cincinnati — A line of cemented carbide cutting tools was shown.

L. S. Starrett Co., Athol, Mass. — Machinists' hand tools, dial indicators, power saws, band saws, and steel tapes were shown.

Stearns Magnetic Mfg. Co., Milwaukee — A new magnetic brake for fractional horsepower motors, disk brakes, clutches, magnetic separators, and other magnetic equipment were shown.

Sterling Bolt Co., Chicago — Bolts, nuts, rivets, screws, washers, and a new discount calculator were exhibited.

D. A. Stuart Oil Co., Ltd., Chicago — Special and metalworking lubricants and cutting fluids were shown.

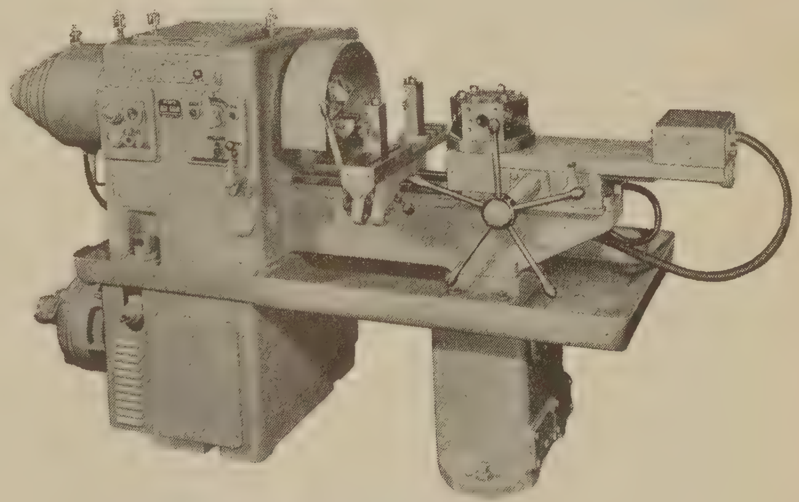
Sundstrand Machine Tool Co., Rockford, Ill. — This exhibit included a new Triplex Rigidmil with three 25 hp heads, a new 75 hp automatic lathe; a new model 4 automatic lathe (illustrated) for short and long run turning; a new four slide automatic lathe; an improved model 10 automatic lathe with special tooling; a redesigned No. 00 Rigidmil with a Sundstrand automatic index base; a new Rigidmil, model 22, with a feed attachment for step milling keyways; a model 33 Rigidmil with a high-speed gear driven head and 6 to 300 ipm feed rate; a new No. 53A drilling and centering machine with power feed and clamping; and a special six-spindle Rigidmil for milling cylinder heads. In conjunction with this exhibit, the Sundstrand Hydraulic Div. displayed a group of products including a hydraulic transmission, hydraulic pumps, a variable displacement circuit pump, a new hydraulically balanced constant displacement pump, and such items as fuel and clamping pumps, lubricating pumps, solenoid valves, fluid motors, etc.

Sun Oil Co., Philadelphia — New grades of cutting oils, lubricating oil testing methods, and other petroleum products for metalworking shops were shown.

Super Tool Co., Detroit — A line of carbide tipped cutting tools, standard and special, was shown, and a lathe was in operation demonstrating the Ejector type tools with solid carbide insert bits.

Synthane Corp., Oaks, Pa. — A line of thermosetting laminated plastic sheets, rods, tubes, and fabricated parts was exhibited.

Taft-Peirce Mfg. Co., Woonsocket, R. I. — Precision and rotary surface grinders, form and surface grinding fixtures and accessories, magnetic chucks, thread gages, gage blocks, tool room specialties, inspection equipment and air gages were exhibited.



• • Warner & Swasey 16-in. Electro-Cycle Lathe

Taylor & Fenn Co., Hartford — An automatic two-spindle drilling and milling machine (illustrated); automatic forming and drilling machines; a four-spindle variable speed drilling machine; a duplex spline milling machine; an automatic forming and drilling machine; a foot-operated and a motor-driven spring press; an air-operated spring press; and rotary index presses were shown.

G. H. Tennant Co., Minneapolis — Floor cleaning machines, including sweepers, sanders, and polishers were shown.

Texas Co., New York — Cutting oils and coolants for machining metals and hydraulic oils for machine operation were shown.

Thomas Hoist Co., Chicago — Chucks and drill press vises were exhibited.

Thompson Grinder Co., Springfield, Ohio — Exhibited was a line of grinding machines including the type CS 36x48x120-in. hydraulic surface grinder; type C 16x16x36-in. Truforming grinder (illustrated) for grinding thread rolling dies; type B Truforming grinder for contour work; type F 6x10x18-in. surface grinder; and the 12x11x48-in. dovetail way grinder.

Threadwell Tap & Die Div., Sheffield Corp., Greenfield, Mass. — Carbon and high-speed steel taps; split dies; screw plates; tap wrenches; keyway cutters; drills and counterbores were exhibited.

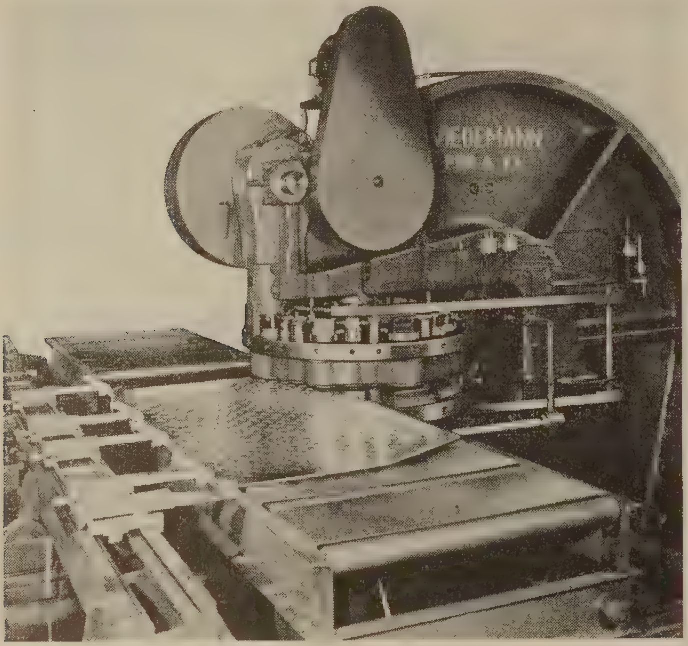
Timken Roller Bearing Co., Canton, Ohio — Roller bearings, and instruments for checking concentricity of bearing rings, and a new graphitic steel highly adaptable to machine tool ways were shown.

Twin Disc Clutch Co., Racine, Wis. — Single and duplex clutches for machine tools, overlocking clutches, and mechanically actuated and air clutches were shown.

Union Mfg. Co., New Britain, Conn. — All types of manually operated chucks, manually operated chain hoists, a new electrically operated self-centering chuck, a new type air-operated self-centering chuck, and an electrically operated wrench were exhibited.

U. S. Electrical Motors, Inc., Los Angeles — Variable speed motors, geared motors, horizontal motors, and vertical pump motors were demonstrated.

U. S. Tool Co., Ampere, N. J. — A group of Multi-Slide machines for stamping and forming products from strip; stock reels and straighteners; and a stock feed for punch presses were shown.



• • Wiedemann Turret Punch Press

° ° °

Universal Boring Machine Co., Hudson, Mass. — Exhibited was a universal horizontal table-type boring machine with an electronic tracing device. Also shown were machine aligning levels.

V & O Press Co., Hudson, N. Y. — A high-speed notching press (illustrated) operating at speeds as high as 800 fpm, a notching fixture, and a model of a friction clutch were exhibited.

Van Norman Co., Springfield, Mass. — A ram type milling machine, a horizontal knee type milling machine, vises, dividing heads, rotary tables, arbors and collets, drills, taps, reamers, milling cutters and oscillating radius grinders were exhibited.

Vascoloy Ramet Corp., North Chicago, Ill. — A carbide shell end mill was demonstrated on a milling machine, and Tantung keyway cutters and drills were displayed.

Veeder-Root, Inc., Hartford, Conn. — This display consisted of a wide variety of mechanical and electrical counting devices.

Vickers, Inc., Detroit — A new line of variable speed transmissions; hydraulic control equipment such as pumps, control valves, and power units; and panel assemblies of hydraulic controls were exhibited.

Vinco Corp., Detroit — A hob grinder for grinding gears from hardened blanks; dressers for formed grinding wheels; an involute checker; and a gear rolling inspection fixture were shown.

Wallace Supplies Mfg. Co., Chicago — An electrically controlled, hydraulically operated bending machine was demonstrated.

Warner Electric Brake Mfg. Co., South Beloit, Ill. — Electrically actuated brakes and clutches, controls, and mounting accessories were shown.

Warner and Swasey, Cleveland — Ram and saddle type turret lathes, tapping and threading machines, five-spindle bar and chucking machines, single-spindle automatic chucking machines and tools and attachments were exhibited. The five-spindle bar and chucking automatic (illustrated) employs quadrant linkage for cross and longitudinal feeds instead of cams. A 16-in. electro-cycle turret lathe (illustrated) with drum control on the turrent was designed particularly for machining nonferrous metals.

Weddell Tools, Inc., Rochester, N. Y. — Exhibited was a line of inserted blade cutters and accessories; a new super-carbide tipped Tri-Bit face mill; boring heads and hollow mills; and flywheel arbors and adaptors.

Westinghouse Electric Corp., Pittsburgh — Lifeline motors and motor controls for machine tool applications were exhibited.

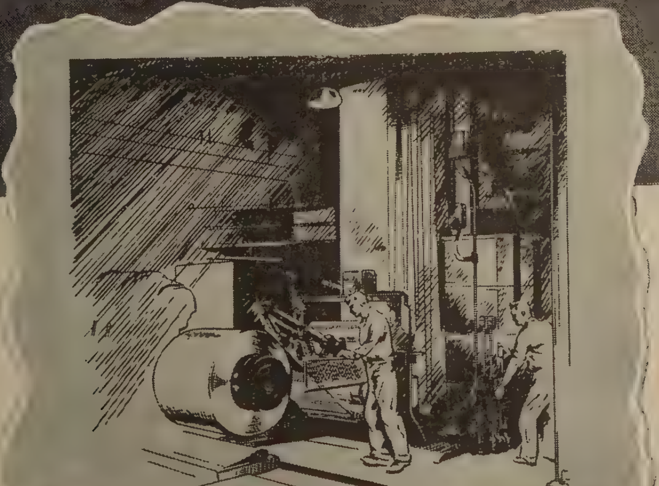
Wiedemann Machine Co., Philadelphia — Several of the Wiedemann turret punch presses were exhibited. The type R-7 (illustrated) will pierce different shaped holes up to 6 in. square in sheets up to 60x120x¼ in. It has a 54-in. throat, contains 12 to 32 punches and dies, and will operate at 65 strokes a min.

Wilson Mechanical Instrument Co., New York — Rockwell hardness testers, Rockwell superficial hardness testers for thin materials or hardened surfaces, and Tukon tests for microhardness testing of extremely thin materials were exhibited.

Wilton Tool Mfg. Co., Chicago — A line of vises was exhibited.

Yale & Towne Mfg. Co., Philadelphia — Electric trucks handling pallets and bins; a counting type scale; hand lift trucks; electric hoists; and hand chain hoists were exhibited.

MESTA *electrolytic* CLEANING LINES



Battery of Five 42" Mesta High Speed Electrolytic Cleaning Lines . . . .

Assure Suitable Stock for the Electrolytic Tinning Operation.

DESIGNERS AND BUILDERS OF COMPLETE STEEL PLANTS

MESTA MACHINE COMPANY · PITTSBURGH, PA

Assembly Line . . .

WALTER G. PATTON

• Packard brings out new models without losing a day's production . . . Steel conversion program is adopted to help solve company's steel problem . . . Kaiser-Frazer output hits 100,000.

DETROIT—Packard has accomplished what no one ever dared to predict would happen in the automobile industry: The company has changed to a new model without the loss of a day's production and is achieving its peak production for 1947 in the same month—September.

The circumstances which brought about the Packard changeover without a plant shutdown are, of course, unusual. Since V-J Day, Packard engineers have been planning the postwar car. Designs were frozen in 1945 and introduction of the new model was originally planned for August 1946. The delay of more than a year has, of course, provided valuable time for planning the changeover operation.

In March of this year, Packard announced its new convertible with entirely new postwar styling. Production on this model in quantity got under way in June. Since that time the 1948 models have gradually been worked into Packard's production in increasing quantities until two out of four cars coming down the line today are 1948 models. Assembly of 1947 models will be terminated this month. Up to the present time more than 3000 of the 1948 models have been shipped to dealers.

The 1948 Packard line includes three all-new 8 cylinder models having 130, 145 and 160 hp and designated as the Eight, Super Eight and Custom Eight. Packard will continue to make 6-cylinder cars for taxi cabs and export but these are expected to amount to only about 4 pct of total production.

Many of the parts of the three new engines are interchangeable, facilitating both production and service. Compression ratio of 7 to 1 may be compared with 6.85 to 1 for 1947 models. It is expected that the compression ratio of the present engine can be increased still further as higher octane fuels become available.

When questioned on the subject of high compression engines Packard engineers indicated that in their opinion it may take as long as 5 years before fuels with more than 90 octane rating are available at gas stations throughout the country.

The crankshaft in the new engines is somewhat heavier than in the previous models and the new hardened crankshaft sprocket, increased piston displacement, larger connecting rod bearings and increased main bearing areas are featured in the new engines.

Valve stem guides are phosphate-treated to prevent rusting and scoring. Cylinder heads have been redesigned and a broached instead of a milled finish permits exceptionally accurately-held dimensions in the 1948 models, Packard engineers pointed out. Cylinder bores are given improved finish by the use of specially designed honing machines.

THE unusually powerful acceleration of the new Packards was amply demonstrated for members of the press who were taken for a tour of Packard's proving grounds at Utica, Mich. Those who cared to do so were taken for a fast spin around Packard's banked track that permits safe driving at speeds of 100 mph. On the day of the visit a Packard Custom Eight circled the 2½ mile concrete track at a clocked speed of 99.7 mph.

The 1948 Packard line includes 17 different body types featuring the "free-flowing" styling that appears to be, more and more, establishing itself as a pattern for postwar cars. As in the Packard convertible, the "hardtop" Packards have no rear fenders and the body simply sweeps over the wheels. All the cars are equipped with a new "Comfort-Aire" system by which air enters through two ducts leading from the grille to the front compartment. This system of ventilation minimizes fogging of the windshield even when driving in a rain storm, Packard engineers contend. Door-handles pull to instead of twisting.

George T. Christopher, president of the company, explained that tooling costs of the new model will total more than $20 million, or almost four times the previous cost of a changeover. Half of the increase in cost, he said, is represented by higher prices; the other half is accounted for by the fact that the model change is the most drastic ever undertaken by Packard.

MR. CHRISTOPHER emphasized the fact that a changeover without a halt in production would hardly be possible except for existing circumstances. To make the changeover, the company had to build up a bank of 23,000 motors. In addition, there was no problem of cleaning out old models in dealers hands as would normally be expected. Incidentally, Packard sales officials say they now have on hand 50 pct more bona fide orders than they had a year ago, despite the fact that some dealers have quit taking orders for extended periods of time.

Packard's production difficulties during the past year are attributable to a great extent to its failure to receive adequate quantities of steel, according to Mr. Christopher. Prior to the war, Mr. Christopher explained, Packard got about 50 pct of its steel from small mills, three of which have since been sold to private interests.

With these sources cut off and other suppliers operating on a rigid quota system, steel has been a par-

Wheelabrator Speeds PRODUCTION
--------Reduces Unit Cost

and there's a size and type for every need

The present need for equipment that will turn the metal cleaning production curve sharply upward and do the job at lowest unit cost places the Airless Wheelabrator at the top of the buying list for shops large and small. And in the Wheelabrator line . . . the most complete on the market . . . you will find the *exact* size and type of machine to meet your requirements, an important fact to consider when you are asked to buy equipment that may be undersized or oversized as far as your particular needs are concerned.

Wheelabrator Tumblasts

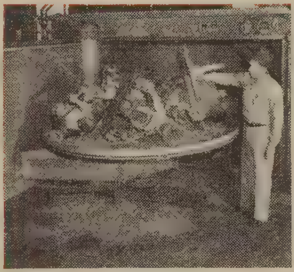
The Wheelabrator Tumblast uses the endless conveyor method of tumbling . . . an exclusive *American* feature . . . which completely exposes all surfaces of every piece to the full effect of the abrasive blast. Experience has shown that no other blast mill designed for tumbling work can match its effectiveness. The machine is made in eight standard sizes from 1 cu. ft. to 63 cu. ft. capacity for batch-cleaning heavy pay loads in which individual pieces vary in weight from a fraction of an ounce up to hundreds of pounds.

Wheelabrator Multi-Tables

Multi-Tables are recommended for cleaning flat or fragile work which has high vertical edges or deep pockets. Work to be cleaned is placed upon a series of rubber covered work tables mounted on a main spider platform which rotates on a central spindle. As the platform turns about its axis the tables are carried into the cabinet where they revolve as they pass through the blast from one or more Wheelabrators. Movement of work in this manner provides complete coverage of all exposed surfaces. Built in five models with Tables ranging from 8" to 66" diameter.

Wheelabrator Special Cabinets

American's problem-solving engineers offer you a wealth of experience on cleaning and finishing problems . . . all the way from transforming rough ideas into definite plans, to the installation of tested, ready-to-operate equipment. No matter what your cleaning problem may be come *American* for the practical, economical solution.



Wheelabrator Swing Tables

The Wheelabrator Swing Table is a versatile, hygienic, general purpose blast cleaning machine that will handle 80% of all airblast room jobs. It is also ideal for the shop that requires moderately priced equipment capable of handling a wide range of large and small pieces where the daily production does not warrant the purchase of several different types of cleaning equipment. Swing Tables are supplied with 24", 48", 66", 72" and 86" diameter tables. Write for Catalog 214-A.

Wheelabrator Plain Tables

The Wheelabrator Plain Table, with its single rubber covered work table, is designed for handling work which does not have too many pockets or high vertical edges. It is an ideal machine for the jobbing foundry having a varied production of flat or fragile work. Plain Tables are furnished with 6', 8', 10', 12' and 14' rubber covered work tables. Write for Catalog 204

THE AMERICAN MOLDER

American

WHEELABRATOR & EQUIPMENT CORP.
(FORMERLY AMERICAN FOUNDRY EQUIPMENT CO.)
510 S. Byrkit St., Mishawaka 3, Indiana

ticularly critical item with Packard. In the meantime, the company has been working on a conversion program which Mr. Christopher feels will be of great assistance in solving the company's steel difficulties. An adequate number of ingots have been promised, Mr. Christopher said, and arrangements have been made to roll about 50 pct of these ingots.

Mr. Christopher gave the impression that Packard's steel problem should be less critical in the months ahead. If steel is available, he looks for production of 25,000 Packards during the remaining 4 months of '47 and 48,000 during the first 6 months of 1948.

A curious situation developed as the result of the announcement of Packard's convertible last spring. Dealers naturally passed the information on to their customers and recently in a southern city three out of four prospective Packard customers asked for a delay in delivery of a new car so they could obtain the 1948 model. However, with so many customers on the list the remaining '47 models can be easily sold.

Engineering work on Packard's new automatic transmission has been completed, but with deliveries of special machines requiring from 9 to 18 months it is not expected that the new Packard automatic transmissions will be in production much before June 1948.

Mr. Christopher admitted that the prints for the new machines are out and that the present problem is to get tools and equipment. The present design represents accumulated engineering developments covering a period of 6 years, he said. Mr. Christopher admitted that the new transmission will present a formidable production job and that the service problem will also be difficult. The 1948 models are equipped to use either the standard or the new automatic transmission.

It is not expected that Packard will substitute aluminum for steel for many of its parts. According to Mr. Christopher, for some applications aluminum actually costs more than gray market steel. He also contended that the real advantage in using aluminum instead of steel is available only in large parts.

Mr. Christopher confirmed reports that Packard had abandoned its plans for producing a ¾ to 1½ ton truck because it could not obtain adequate supplies, principally steel.

Packard's only source of supply of carburetors is Carter of St. Louis which is currently on strike. The present supply of carburetors on hand at Packard is equivalent to about 30 days' requirements.

KAISER-FRAZER CORP. assembled its 100,000th car at Willow Run this week and the occasion was celebrated by the announcement of a new luxury car, the Kaiser Custom, four-door sedan and a personal visit to the Willow Run plant by Henry J. Kaiser, chairman. Mr. Kaiser addressed the Willow Run employees in the plant and congratulated them warmly on their achievement in building from scratch 100,000 cars in less than 15 months to become the fourth largest producer in the industry.

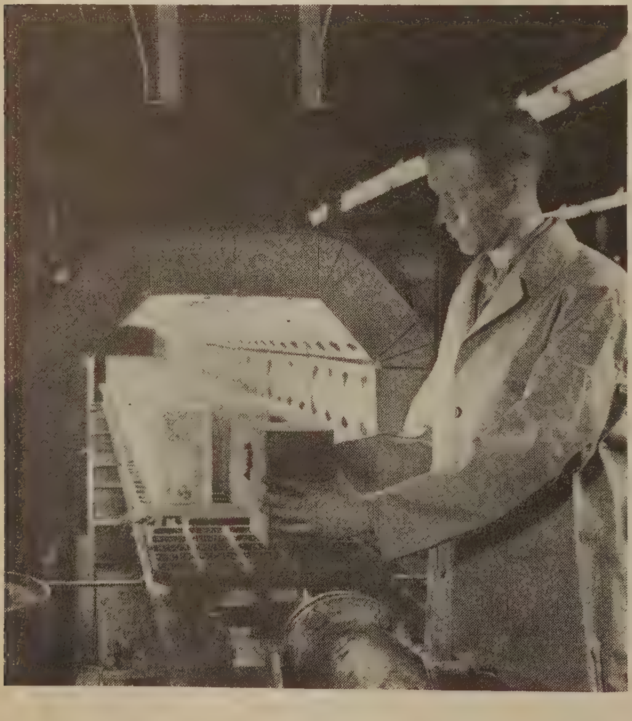
Meanwhile, production continues to hum at the Willow Run plant despite temporary obstacles in the form of material shortages, principally steel. Peak daily output this week is expected to exceed 800. Estimated September production will probably exceed 16,000 units, a new monthly record.

The new model Kaiser Custom is the fourth member of the Kaiser car family. Preceded by the Kaiser, the Frazer and a previous luxury model, the Frazer Manhattan, the new car has the same engine and body lines as its predecessors. Changes introduced in the new Kaiser Custom are confined to color styling, interior trim and interior fittings.

LOOKING back at Kaiser-Frazer's phenomenal rise to fourth place in the automobile industry, it may be recalled that during July 1945 plans for the formation of the company were first disclosed by Henry J. Kaiser and Joseph W. Frazer. Willow Run was leased 2 months later. Removal of bomber machinery was not accomplished until March 1946 and in June 1946 the first Kaiser-Frazer car came off the assembly line. A second assembly line was added in November 1946.

Whether Kaiser reaches its goal of 1500 cars per day during the next 12 months will depend, most sources here believe, on the ability of the company to obtain enough steel and other supplies.

However, when it is recalled, that during the past 6 months Mr. Kaiser has (1) taken over management of Continental Motors Detroit Engine plant to increase the output of motors for Willow Run, (2) purchased a foundry at Dowagiac, Mich., for the production of gray iron castings and (3) purchased Chapman-Price Steel Co., of Indianapolis—in addition to his earlier acquisition of a blast furnace and a substantial interest in a steel plant—it is apparent that Henry Kaiser is not easily stopped from reaching his goal.



LOST WAX: *Banks of 250 w infrared lamps—248 in all—are used to dry molds and melt out 98 pct of the wax pattern at the precision (lost-wax) casting foundry of Westinghouse Electric Corp. The company reports that the infrared heating reduces mold cracking, and hence rejects.*

for low-cost, mass-production heat treating

the trend is to—

MECHANIZED

AJAX SALT BATH FURNACES

Ajax mechanized salt bath furnace installations are daily demonstrating their labor-saving value and production efficiency. For example, when one typical Ajax mechanized unit replaced a manual process—

- FOUR WORKERS REPLACED FORMER 9
- CAPACITY WAS BOOSTED 325%
- REJECTS FELL FROM 10-15% TO 0
- COST-PER-POUND DROPPED TO 1/7 PREVIOUS COST OF TREATING
- 67% WAS SAVED IN FLOOR AREA

Ajax mechanized units take the human element out of timing . . . assure a constant, predetermined production . . . and produce more uniform results. Various types (some illustrated) are available to automatically convey work of every kind and size through successive steps in such heat treating operations as: Hardening—without scale or decarburization . . . Martempering . . . Austempering . . . Carburizing . . . Brazing . . . Drawing . . . Annealing . . . Solution Heat Treatment . . . Nitriding . . . Descaling and Desanding, etc.

AJAX ELECTRIC COMPANY, INC.

Frankford Ave. at Delaware Ave., Philadelphia 23, Pa.

The World's Largest Manufacturer of Electric Heat Treating Furnaces Exclusively!

In Canada: Canadian General Electric Co., Ltd., Toronto, Ont.

Associate Companies: Ajax Metal Co ● Ajax Electric Furnace Corp. ● Ajax Engineering Corp. ● Ajax Electrothermic Corp.

SEE AJAX AT THE
METAL SHOW
CHICAGO • Oct. 18-24
BOOTH 1054
INTERNATIONAL AMPHITHEATRE

AJAX ELECTRIC SALT BATH FURNACES

Washington . . .

EUGENE J. HARDY

• Commerce steel study bogging down . . . Possible personnel loss primary reason . . . No immediate changes in military procurement as a result of unification . . . Services await passage of bill streamlining peacetime buying methods.

WASHINGTON—The much discussed Commerce Dept. historical volume on the iron and steel industry (THE IRON AGE, Apr. 3, p. 101; June 26, p. 76) may never see the light of day as a result of the Civil Service Commission order directing all government departments to replace temporary war service personnel with career employees who are now among the unemployed.

Practically all of the professional employees who have been working on the steel report for more than a year fall within the temporary classification. R. M. Weidenhammer, chief of the Commerce Dept's. Div. of Machinery and Metals, who has been actively directing the work on this report will be among the first to go.

A Commerce employee for only a few years, Mr. Weidenhammer, recently returned from Stockholm as government delegate to the meeting of the Iron & Steel Committee of the International Labor Organization, has been under fire for some time. Recently, the Civil Service Commission, acting with full authority, removed him from the government payroll and frantic efforts on the part of his superiors were necessary to have him reinstated.

Whether they will be able to retain his services indefinitely is a moot question at this time. If Civil Service is able to dig up a career employee with the necessary qualifications, Mr. Weidenhammer will have to go—unless Commerce chooses to risk losing three other employees as specified in the commission order.

* * *

OFFICIALS of the Office of Domestic Commerce do not claim that Mr. Weidenhammer or any of his assistants are indispensable, but point out that unless the career employees designated to replace these men are experienced in the iron and steel industry completion of the steel document might be most difficult.

It is further pointed out that new employees might have to make a new start on the report, thus discarding more than a full year's effort. Should this situation materialize, Commerce might decide to chuck the entire project because of the time and money involved.

As of the time of this writing, however, Commerce still hopes to have the steel volume completed by Jan. 1. Only if the entire staff working on the project were dismissed would the work be brought to an abrupt halt. Commerce officials say that Mr. Weidenhammer's departure will be a handicap, but that the rest of the staff can finish the job since about half the chapters are completed.

In any case, Commerce is greatly concerned over this turn of affairs, since strict adherence to the Civil Service order would result in the temporary paralysis of many divisions, particularly in the Office of International Trade, staffed largely by war service employees of the old Foreign Economic Administration.

While this situation affects all departments of government, it is most bothersome to Commerce, due to the large number of temporary employees it has absorbed from such agencies as FEA, CPA, OPA, NHA, SWPC and other wartime organizations.

UNIFICATION of the armed services has given the Army, Navy and Air Force Depts. their first opportunity to work out permanent uniform procurement methods with resultant savings in time and money. While the Army and Navy have instituted joint and cross procurement in regard to many items and will continue along these lines, up until the time the unification law was passed conflicts over such policies remained largely unresolved.

Now, as pointed out by a high Navy procurement officer, there is one official on the working level, Defense Secretary James V. Forrestal, who can be called upon to settle differences of opinion between the three service branches. This latter point is perhaps the most significant factor in the new law in regard to procurement.

No great changes in procurement policies are planned at the present time. The Army and Navy will continue to work toward cross and joint procurement and will include the new Air Force Dept. in such plans. Central procurement is not contemplated. The services will accentuate the program whereby each service makes all purchases in fields in which it has predominant interests.

Preparation of specifications covering items solely of interest to one service will be the responsibility of that service, according to the new division of responsibilities. Specifications for items of common interest will be inaugurated by the service prior to publication. Generally, custodianship of specifications will be vested in the procuring service.

Still waiting to be passed by the Congress is the procurement legislation originally brought up in the 79th Congress (THE IRON AGE, Feb. 14, 1946, p. 120) which modernizes military procurement methods, unifies the legislation under which the services do their buying, wipes out obsolete procurement laws, and continues wartime negotiation powers. This bill, according to Army and Navy officials, will establish "identical precepts from

Cutting Out the "Chatter" Improves Quality

SUNOCO WAY LUBRICANT . . .

Increases Accuracy, Eliminates Need for Extra Grinding

A manufacturer of steel products was having trouble with the lubrication of five milling machines. The tableways and cross-slide ways were becoming coated with heavy, dark brown deposits which caused severe chattering. An extra grinding operation had to be specified, and many pieces were rejected because of the quality of the machining.

An outstanding performer, Sunoco Way Lubricant, was recommended by the Sun Engineer who was called in for consultation. With this lubricant in use, table chatter was completely eliminated. Better tolerances were obtained. The additional grinding step was no longer necessary.

Quality of the dies that are being milled has been much improved, and the management now states it would not use any other lubricant on these machines.

Increased production and improved quality are typical results in plants where Sun "Job Proved" lubricants are used. In machine shops, in power plants, in quarries, mines, mills and factories, Sun "Job Proved" lubricants help to "produce more for less." For full information on the Sun lubricants for your machines, call the nearest Sun office, or write Department IA-10.

SUN OIL COMPANY • ***Philadelphia 3, Pa.***
In Canada: Sun Oil Company, Ltd.—Toronto and Montreal

SUN
SUNOCO
INDUSTRIAL
PRODUCTS

which we hope will stem identical methods." Passage of this bill will give the services the authority to put their procurement branches on a businesslike basis.

THE bill passed the House during the first session of the 80th Congress but was blocked in the Senate by Senator Aiken, R., Vt., who wanted the authority contained in the legislation extended to the Bureau of Federal Supply.

The measure is still on the Senate calendar and Army and Navy officials are confident that it will clear the Senate on the early days of the second session. It is believed that Senator Aiken's objection can be overcome by pointing out that Federal Supply and other agencies were included when the bill was first planned in 1945, but later dropped out at their own request.

Perhaps the most important feature of the measure is the fact that it makes uniform all the laws and rules covering purchase procedures for the armed services and repeals many diverse and obsolete laws.

Of equal importance is the continuance of the wartime authority to negotiate contracts in peacetime, particularly in regard to research and development contracts and technical procurement. Advertising will still be used for normal stock and subsistence supplies.

Contracting officers will also be given broader authority under the bill. For example, no longer will it be mandatory to award contracts to the lowest bidder, irrespective of public interest or lower ultimate cost. If after advertising the contracting officer decides that prices are not reasonable and were not arrived at in open competition he may reject the bids and negotiate the contract.

This authority was proven successful during the war and is designed to break collusive bidding, follow-the-leader pricing, rotated low bids, identical bids requiring drawing of lots, uniform estimating systems, and refusal to classify the government as other than a retail buyer irrespective of the quantity purchased. The services will also be given the authority to report such cases to the Justice Dept. A detailed discussion of the provisions of the bill will be found on p. 78. THE IRON AGE, Feb. 27.

THE BULL OF THE WOODS

BY J. R. WILLIAMS

WHILE HE'S OUT--LOOK! HE'S NEVER FINISHED A SINGLE BOTTLE OF THAT MEDICINE, AND SOME HE GOT IN 1918! AND HE'S ALWAYS YAPPIN' AT US, "GET TH' JOBS DONE!"
WOW! THAT MUCH BEHIND WITH HIS HEALTH AND HE GETS PEEVISH IF HE SEES ONE OF OUR FEET BEHIND THE OTHER!
DRAWING NO
WASTED ENERGY
J.R.WILLIAMS 10-3
COPR. 1947 BY NEA SERVICE, INC. T. M. REG. U. S. PAT. OFF.

Finds Rear-Engine Auto Unstable at High Speeds

Washington

• • • **Benefits of the** Czech Tatra V-8 rear-engine automobile are almost outweighed by the vehicle's disadvantages, according to a Commerce Dept. report issued last week.

Although the advantages of a rear-engine layout are numerous, Czech automotive engineers failed to take full advantage of the unorthodox layout, according to the report, PB-75857, "Tatra Car, Type 87 V-8, Air-Cooled Engine at Rear," now on sale at the department's Office of Technical Services.

The Tatra was found by investigators to be inherently unstable at moderately high speeds, and the use of an internally-housed backbone frame made it impossible to obtain a low flat floor, British Army investigators said in one report.

Power unit of the Tatra is placed behind the rear axle and the cylinders are arranged at an angle of 90°. A single disc-plate type clutch, requiring only low pedal pressure at normal engine speeds, is employed. A centrifugal weight system is employed in the pressure plate springs.

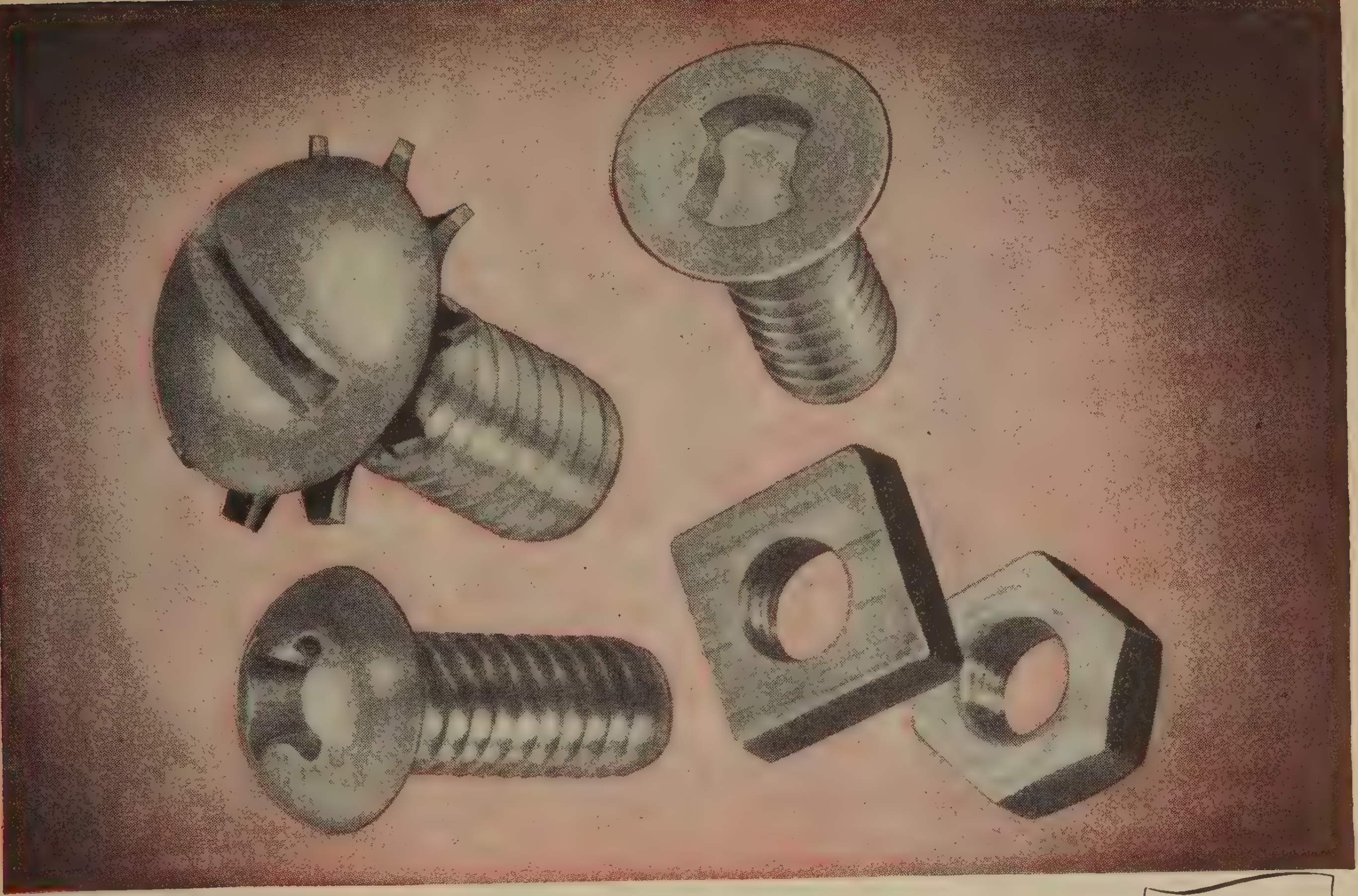
Investigators found that locating the engine at the rear of the car was helpful in reducing noise inside the vehicle. Excellent forward vision is afforded, they reported. The 51-page report includes photographs, diagrams and drawings.

Burying Costs Estimated

Washington

• • • **Cost of moving** U. S. industry underground will be a vital subject of discussion in 1948 budget hearings early next year. Senator Bridges, R., N. H., chairman of the Senate Appropriations Committee, plans to confer soon with the Secretaries of Defense, Army, Navy and Air Force in an attempt to get an idea of the costs involved.

Essential laboratories and producers of critical materials are tentatively earmarked for underground study. Congressmen want to know what industries the armed services have placed in the must category for underground movement, what locations are in mind and what the cost is likely to be.



WHEN YOU CAN COUNT ON EVERY FASTENER... THAT'S t.f.e. True Fastener Economy!

It's the cost of using a fastener that counts

The saving you can make by being able to depend upon your supplier's "quality control" and by reducing inspection in your own plant, invariably amounts to a greater saving than could be effected if a lower price were available.

R B & W *Machine Screws and Stove Bolts Made to One Quality Standard*

At each RB&W plant, quality control is effective at every stage of manufacture—beginning with laboratory analysis of raw materials—*not* just at the end of the production line. The finished product that is delivered to you can be depended upon for uniformly high qualities—giving you a fastening device that assembles at high speed, provides maximum desired holding power and, in terms of finish, is a credit to the appearance of your assembled product.

You Get T. F. E. *When You*

1. Reduce assembly time to a minimum by savings through use of accurate and uniform fasteners
2. Make your men happier by giving them fasteners that make their work easier
3. Reduce need for thorough plant inspection, due to confidence in supplier's quality control
4. Reduce the number and size of fasteners by proper design
5. Purchase maximum holding power per dollar of initial cost, by specifying correct type and size of fasteners
6. Simplify inventories by standardizing on fewer types and sizes of fasteners
7. Save purchasing time by buying larger quantities from one supplier's complete line
8. Contribute to sales value of final product by using fasteners with a reputation for dependability and finish

RUSSELL, BURDSALL & WARD BOLT AND NUT COMPANY

102 years making strong the things that make America strong

RB&W
THE COMPLETE
QUALITY LINE

RB&W bolts, nuts, screws, rivets and allied fastening products are manufactured in a broad range of styles, sizes and finishes.

• • •

Plants at: Port Chester, N. Y., Coraopolis, Pa., Rock Falls, Ill., Los Angeles, Calif. Additional sales offices at: Philadelphia, Detroit, Chicago, Chattanooga, Portland, Seattle. Distributors from coast to coast. By ordering through your distributor, you can get prompt service from his stocks for your normal needs. Also—the industry's most complete, easiest-to-use catalog.

West Coast . . .

ROBERT T. REINHARDT

• California continues to boast of industrialization . . . Los Angeles foundries look to mechanization to solve cost problems . . . Proposed Seattle steel plant shrinks in size.

SAN FRANCISCO—Experienced poker players seldom count their chips while the game is in progress, but apparently the California State Chamber of Commerce does not consider itself engaged in a game of chance and takes great delight in presenting facts and figures rather often to show the gains made by the state in its program of industrialization.

Since January, 1945, there have been approximately 4650 new factories and major plant expansions announced, started or completed in California with private capital investment of approximately $700 million, according to Harry A. Mitchell, chamber president.

Largest relative increases by major group industries since 1940 as gaged by midyear 1947 employment, were made in the electric machinery and equipment field which showed a 192 pct increase in employment. Gains of between 50 and 60 pct were reported in the fields of transportation equipment, furniture and finished wood, nonferrous metal and sheet metal, automobiles, automotive equipment and paper products.

Rubber and rubber products showed an increase of 119 pct; machinery, 109 pct; stone, clay and glass products, 102 pct; petroleum products, and chemical industries, 70 pct each.

Expansions in the steel industry since 1940 are reflected in a 70 pct increase in employment.

It is interesting to note that from 1939 through the first half of 1947 private capital invested in California manufacturing has exceeded the federal government's heavy wartime investments in this state. Since 1939, government financed manufacturing construction in the state totaled $1,006 million, according to the War Production Board. During this same period, private financial interest had invested $1175 million in industrial expansion.

A capital investment of approximately $360 million was made in expanding 2170 factories during the past 2½ years. Nine hundred and 14 of these expansions with an investment of $164,377,486, are located in Los Angeles County, and the 12 Bay area counties reported 913 major enlargements with an investment of approximately $153,771,000.

Approximately 2480 new factories were started or announced in California with a capital investment of approximately $340 million in the 2½ year period.

THE Bureau of Reclamation is anticipating expenditures of approximately $41 million in California during 1948. Included in this expenditure will be work done on Parker Dam, costing approximately $140,000 and Colorado River Levee work involving approximately $1,150,000. Assuming maximum work accomplished by all contractors on the Central Valley Project, approximately $40,300,000 will be spent on this project.

The Bureau intends to spend a total of approximately $195 million during 1948 throughout the eleven western states, according to their latest report. Considerable tonnages of reinforcing bars and structural shapes are involved in all of these projects but no total tabulation of tonnages has been made available.

Another transition from wartime production to the development of peacetime industry has taken place in Richmond, Calif. where the War Assets Administration has sold Shipyard No. 1 to the Parr-Richmond Terminal Corp. for $500,000 plus approximately $150,000 for the equipment.

This yard was originally built by the Henry J. Kaiser interests in 1941 for the construction of ships for the British government.

The site includes 115 acres on San Francisco Bay. Several of the buildings which cover approximately 800,000 sq ft are in excellent condition and well designed for many manufacturing processes.

Labor interests have been particularly anxious that this property be returned to private ownership and new industries established to help relieve the unemployment situation in the Richmond area which resulted from the closing of the shipyards which once employed approximately 90,000 persons. There have been some interests in the community which demanded that whatever industries located there must comply with rigid regulations pertaining to dust and noise nuisances. At one time, the Kaiser interests hoped to locate a gypsum plant in that area but were discouraged by the opposition of such groups to the possible dust nuisance.

International Harvester Co. has already taken 250,000 sq ft of land on former shipyard property for the construction of a parts depot to serve the Pacific Coast.

Approximately 60 new industries have located in Richmond since the end of the war, it is reported.

LOS ANGELES—There is an increasing trend among the larger foundries here towards lowering production costs and improving quality through mechanization. Keen competition among the foundries has brought this about. This is particularly true the last few months with foundries having to beat more competitive prices than usual. The better shops have been getting the business while the marginal ones are having a hard time making both ends meet.

The mechanization trend is mainly due to the fact that foundry work is to a large degree a materials handling industry. A foundry must handle about 200 tons of

MELODY IN *Motion*

DR. FABIEN SEVITZKY, COURTESY INDIANAPOLIS SYMPHONY ORCHESTRA

Two seas of expectant faces . . . in the darkened house and in the rows of poised musicians . . . are magnetized by the figure on the podium. With distinctive beats, the maestro draws his instrumentalists into intregrated motion . . . blends individual notes into pleasant sounds . . . unfolds the theme of a first movement.

Although men who can engineer the efficient transmission of power into useful work might seem to bear little resemblance to symphony orchestra conductors, actually both rely on specialized knowledge and experience. The conductor is conversant with every musical instrument . . . the transmission engineer with characteristics of friction, hydraulic, and air-actuated drives. The conductor is familiar with a thousand complicated scores; interprets each composition; balances each program . . . the engineer analyzes each requirement of power transmission equipment in applying units to obtain balance in design.

For the recommendation of experienced engineers, outline your power transmission problem to the TWIN DISC CLUTCH COMPANY, Racine, Wisconsin (Hydraulic Division, Rockford, Illinois.)

Power Take-off
Heavy Duty Clutch
Machine Tool Clutch
TWIN DISC
CLUTCHES AND HYDRAULIC DRIVES
REG. U.S. PAT. OFF.
Tractor Clutch
Marine Gear
SPECIALISTS IN INDUSTRIAL CLUTCHES SINCE 1918

materials in order to ship a ton of castings. Under these circumstances, and with the high labor rate prevailing today, mechanization seems to be the only hope for revival, as one foundry expert pointed out. Unless foundrymen become increasingly aware of economical foundry handling procedures, and get rid of the wheelbarrow and scoop shovel in favor of mechanical equipment, they cannot survive, according to some of the more successful operators.

The nonferrous foundries in this area are on the upgrade but business is generally spotty. Those shops producing primarily for transportation and housing—car wheels, brake shoes, trailers, soil pipe and fittings, plumbing fixtures, heating equipment—are busy. The gray iron and steel foundries are also on a slight upgrade although there are some weak spots throughout the area.

While foundries concentrating on producing for the housing and transportation industries are strong, the remaining foundries are generally slow. A good deal of this is due to shortages of steel for final manufacture. Earlier this year, manufacturers stockpiled castings in anticipation of being able to obtain steel to finish their products. This is primarily true with manufacturers producing space heaters and water heaters, etc., requiring steel.

There is plenty of coke available at present although it has been tight. The ovens of the Lone Star Steel Co., Daingerfield, Tex., are in production and have been shipping into this area. It has given the gray iron foundries an additional source of supply. However, there is not much possibility of avoiding a coke shortage this winter. In anticipation, the foundries are stockpiling coke against the danger of running out.

Foundry grades of iron are still tight but not so scarce as good quality cast scrap. The shut-down of one of the three blast furnaces at Geneva a month ago in the face of heavy demand for all grades of iron, put a crimp in supply which is just now being taken out. All three blast furnaces at Geneva and the old stack at Ironton are all operating at capacity.

The Kaiser Co., Inc., blast furnace at Fontana, although operating at capacity, is producing only basic iron.

SEATTLE—Plans for a $3,500,000, 50,000-ton per year sheet and bar mill announced last year by the Seidelhuber Iron & Bronze Works, have been considerably moderated but a mill is to be built, according to Frank Seidelhuber, Jr.

Where the originally announced mill was to provide not only enough hot and cold-rolled sheet for the Seidelhuber operations in the production of water heaters, but was also to produce sufficient volume to permit outside sales, the latest plans call for a small mill which will provide only enough material for the manufacturing operations of the company.

It is now announced that the new mill will be equipped with a three high stand and that sheet bars will be purchased from an outside source. According to Frank Seidelhuber, Jr., the company had planned for the larger mill only because they didn't believe it would be economical to operate a smaller one. Now, however, they believe they have a plan worked out whereby the smaller unit will be economic and it is to be built with the thought in mind that it could be abandoned in 2 or 3 years if it proved uneconomic at that time, without loss. It is further claimed that this mill can be put into operation within 60 days provided a source of sheet bars is located.

No figures on production capacity of the new mill are being made available at this time, but it is estimated that the sheet needs of the Seidelhuber plant are practically 5000 tons per year.

The company is now producing 300 electric water heaters a day and state that they now have a backlog for 8000 units. The company expects to go into production of gas water heaters as soon as enough material is made available to them to supply their present demand. It is pointed out that gas water heaters outsell electric units ten to one throughout the country except on the Pacific Coast where the ratio is considerably lower. The Seidelhubers' point out that only 7 pct of the homes in the country have any type of water heater at present.

In the event that the water heater business declines seriously, the company has ready for production an aluminum and steel ironing board and an extensive line of aluminum stepladders.

Ground is being broken on Duwamish Avenue for the mill and new factory, and office building.

APPARENTLY no other steel production nor finishing facilities are planned locally. Isaacson's Iron Works is having enough difficulty at the present time in securing suitable scrap for their present rate of production. It is reported here that it is not unusual to lose at least one heat a day because of the poor quality of available scrap. This situation may be relieved to a certain extent when the Puget Sound Bridge & Dredge Co. begin scrapping two LST's for them.

Neither Bethlehem-Pacific Coast Steel Corp. nor Pacific Car & Foundry at Renton, both producers and finishers, indicate any intention of expanding their facilities.

Northwest Steel Rolling Mills are finishing bars to the full limit of their ingot capacity but give no indication of increasing their facilities.

It is reported that this company recently turned down a 3000-ton order from a new customer as they are still unable to meet the demands of their old customers. Their mill has been operating only 4 out of 5 days because of the low ingot inventory in spite of the fact that the mill was shut down for 2 weeks during the past summer while the electric furnace was kept going to build up a supply of ingots. However, this ingot backlog was seriously depleted when the electric furnace failed to function for a week.

SALT LAKE CITY—Kaiser Co., Inc., will draw much of its iron ore supply for its Fontana plant from Utah for several years at least, A. B. Ordway, vice-president and general manager, said during a visit in Salt Lake City.

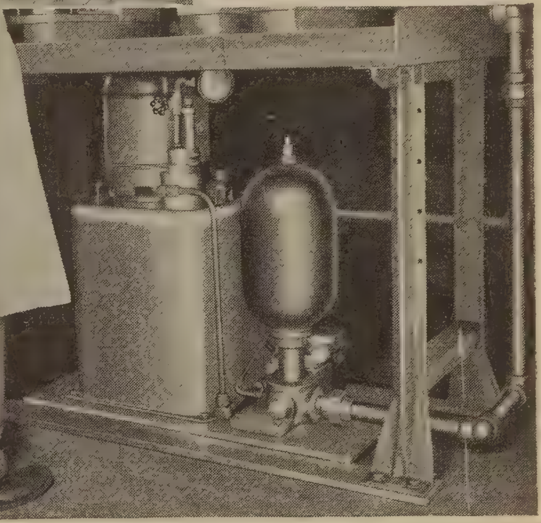
The Fontana plant, he said, is currently obtaining more than half of its iron ore from southern Utah deposits. And while this picture will change with the development of the Eagle Mountain mine in southern California, there will be a continuing need for Utah ore for blending purposes, according to Mr. Ordway.

Plenty of coal for the Kaiser plant is being produced at the mine near Sunnyside, Utah but a squeeze is threatened by the shortage of cars to move it to Fontana.

Produce Your Successive-Operation Jobs Faster with the

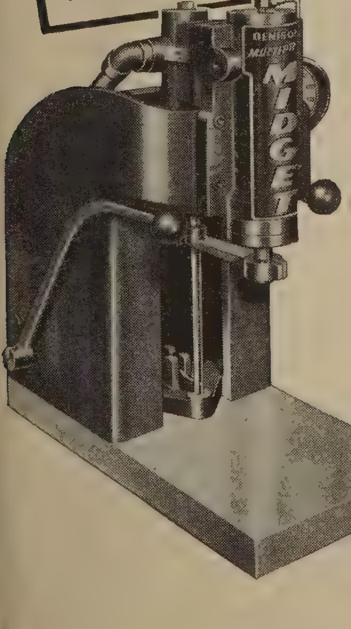
MULTIPRESS MIDGET

All four of these Multipress Midgets are being operated by ONE pumping unit, shown below: Up to 12 Midgets may be used with one such unit —the ultimate in low initial and operation cost!



SPECIFICATIONS (basic unit)

Capacity (ram effort)	1 ton
Stroke	6″
Ram speed adjustable up to 400 ipm down—600 ipm up	
Daylight	10″ or 14″
Throat depth	5″
Base Plate tooling area (optional)	10″x10″ (standard)
Dimensions	24¾″ high x 17″ deep x 18¼″ wide
Weight without base plate	130 lbs.



When your manufacturing calls for successive operations on a part, multiple or "gang" installations of the Multipress Midget will give you increased production—*with low initial cost!* Up to 12 units may be used with a single, centralized power source, with each Midget having individual pressure adjustments from 200 to 2000 lbs.

All the production features of the famous Multipress are incorporated in the new Midget. Its Oil-smooth HydrOILic power offers you Vibratory repeat strokes, fast approach and slow pressing speeds, either dual hand lever or foot pedal safety controls—plus adjustable stroke length, ram speed and pressing effort. A wide variety of optional equipment can be furnished.

Write today for Bulletin M-15—it's filled with facts on this new addition to the Multipress *line.*

THE DENISON
ENGINEERING COMPANY
1158 DUBLIN ROAD
COLUMBUS 16, OHIO

DENISON
EQUIPMENT *in* APPLIED
HydrOILics

PERSONALS

* * *

- **E. E. Louis** has been appointed assistant to vice-president in charge of sales, American Steel & Wire Co., Cleveland. **M. C. Harriman** has been named assistant manager, merchant products sales division, succeeding Mr. Louis. Mr. Louis has been associated with American Steel & Wire Co. for 35 years and has been assistant manager merchant products division, in Cleveland, since 1937. Mr. Harriman's entire business experience has been with the Wire company, having started as a junior clerk in the New York sales office in 1921, and he has been manager of the merchant products sales in the New York office since 1940. His new duties will transfer him to Cleveland. **Robert V. Misar** has been appointed manager of the merchant products department, New York district sales office, American Steel & Wire Co. Mr. Misar joined the Wire company in 1914 and has served in a number of positions since that time, most recently as a salesman covering the merchant trade.

- **Joseph F. Murray** has been appointed sales manager of the Reading Tube Corp. of Reading, Pa. Mr. Murray was formerly associated with the Jones & Laughlin Steel Corp. in the boiler tube and oil well supplies divisions and for the past 5 years was field supervisor for the tubular sales department.

- **William J. Beatty** has been appointed sales engineer in the New York office of the American Air Filter Co., Inc.

- **J. Gerard O'Malley** has been made superintendent of the cold drawn bar mill, Brier Hill plant, Youngstown Sheet & Tube Co., Youngstown. Before joining the company he was a chemical engineer for American Steel & Wire Co. at Worcester, Mass.

- **J. S. Eskin** has been appointed general manager of sales of Realock Fence Div. of the Colorado Fuel & Iron Corp. and its subsidiary companies. He will be located in Buffalo. **L. J. Renner** has been appointed district sales manager, Chicago, of the Wickwire Spencer Steel Div. of the Colorado Fuel & Iron Corp. The former district sales manager, **T. H. McSheehy**, has retired from active service with the corporation.

- **L. A. Welch** has been appointed executive vice-president for R. G. LeTourneau, Inc., Peoria, Ill. During the war Mr. Welch was deputy director of production in the War Production Board, Washington, in charge of field production. For a short period of time, he served as regional director of the WPB in Detroit.

NED A. OCHILTREE, president, Ceco Steel Products Corp.

- **C. Louis Meyer,** founder of Ceco Steel Products Corp., Chicago, and formerly president, has been named to the new position of chairman of the board, and **Ned A. Ochiltree,** formerly executive vice-president, has been elected president. Mr. Ochiltree started in 1915 as a stenographer in the Omaha offices of the organization, then known as the Concrete Engineering Co. He was appointed a vice-president in 1927 and was named executive vice-president in 1944.

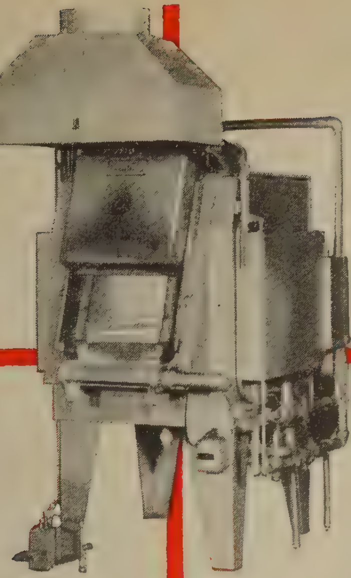
- **John L. Hutton** has been appointed district manager of the Philadelphia area, for the Clark Controller Co., Cleveland. He has been in the electrical control field for 22 years. **O. L. Holcombe,** former district manager, becomes district engineer in the heavy duty industrial areas of southern New Jersey, eastern Pennsylvania and Maryland.

- **S. S. Marshall, Jr.,** a director, member of the executive committee and vice-president in charge of manufacturing operations of the Jones & Laughlin Steel Corp., Pittsburgh, has retired after 44 years' service with the Jones & Laughlin interests. **J. B. Mitchell,** who has been general manager of manufacturing operations of the corporation, has been elected a director, member of the executive committee and vice-president of the corporation in charge of operations. **E. K. Miller,** who has been general superintendent of the Aliquippa works of the corporation, and **H. D. Stark,** who has been assistant general manager of manufacturing operations of the corporation, have been appointed assistants to the vice-president in charge of operations. **H. F. Martin,** who has been assistant general superintendent of the Aliquippa works, has been appointed general superintendent of the works. **P. H. Devaney,** who has been superintendent of hot rolling mills at the Aliquippa works, has been appointed assistant general superintendent of these works. **V. H. Lawrence,** a vice-president of the corporation, has been elected a director and a member of the executive committee.

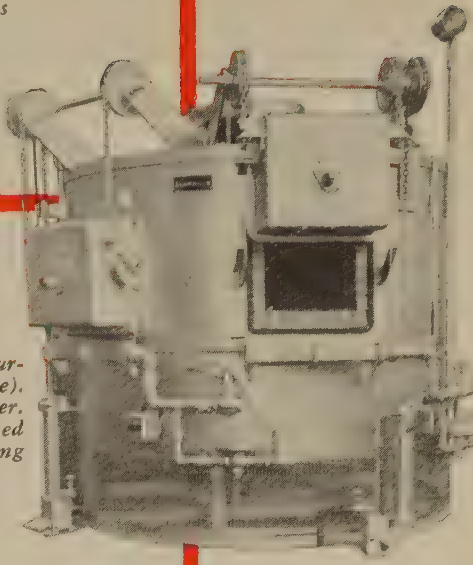
- **L. H. Valette** has been appointed superintendent of universal mill at Midland, Pa., works of Crucible Steel Co. of America. He was formerly associated with Carnegie-Illinois Steel Corp. at Gary, Ind.

- **R. J. Tremblay** has been made assistant general superintendent at the Los Angeles steel plant of Bethlehem - Pacific Coast Steel Corp. Mr. Tremblay was formerly assistant superintendent of rolling mills at the company's Seattle plant and has been with the organization since 1937.

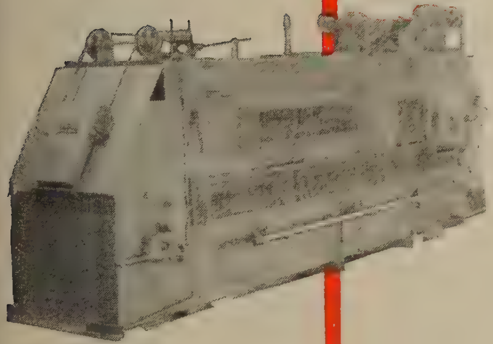
- **John G. Caley** has been made manager of the national accounts department for the southern division of Mack Trucks, Inc. His headquarters will be in Atlanta. Recently he was connected with the Carley Trailer & Equipment Co., and during the war he was regional director for the Office of Defense Transportation in the southeast. Previously he was vice-president and general manager of Transportation, Inc.



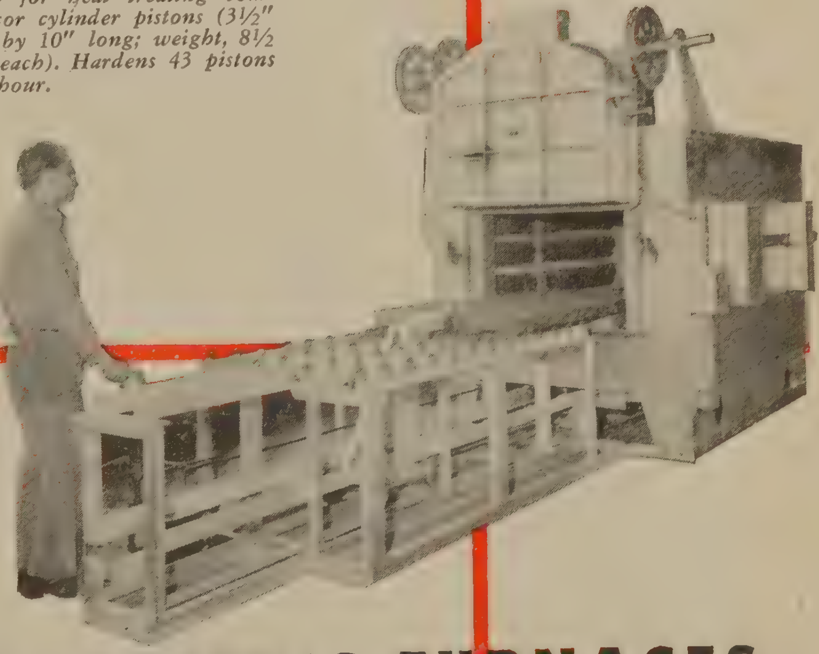
Toolroom Hardening Furnace (controlled atmosphere). Used for heat treating punches, dies and shear blades.



Rotary Hearth Hardening Furnace (controlled atmosphere). Work chamber 48″ in diameter. This particular furnace used for hardening wire drawing dies.



Conveyor Hardening Furnace (controlled atmosphere). Work chamber 12 inches wide by 12 feet deep by 18 inches high. Used for heat treating compressor cylinder pistons (3½″ dia. by 10″ long; weight, 8½ lbs. each). Hardens 43 pistons per hour.



Production Box Furnace (non-atmosphere). Has air operated roller grid. Used for hardening, annealing and stress relieving large die casting dies.

LINDBERG ELECTRIC FURNACES

For Hardening, Annealing and Stress Relieving

Lindberg Electric Box, Rotary, and Conveyor furnaces come in a complete range of standard chamber sizes—box furnaces from 8″ x 13″ x [illegible]″ to 48″ x 96″ x 38″ and up; rotary hearth furnaces from 26″ to 60″ diameter and up; and conveyor furnaces from 12″ x 72″ x 8″ to 36″ x 16′ x 18″. For additional information write, Lindberg Engineering Company 2452 W. Hubbard Street, Chicago 12

LINDBERG FURNACES

• **R. M. Bartlett** has been elected vice-president in charge of fuel oil sales of the Gulf Oil Corp. and the Gulf Refining Co., Pittsburgh, and **H. P. Hobart** has been elected vice-president in charge of lubricating oil sales. Mr. Bartlett's association with the Gulf companies began in 1926 when he was employed as assistant to the vice-president in charge of fuel oil sales. In 1933 he was promoted to manager of the fuel oil department and the following year he was named general manager of fuel oil sales. Mr. Hobart joined the Gulf companies in 1919, as assistant to the general manager of wholesale sales. In 1920 he was appointed manager of Gulf's lubricating sales department, and in 1930 he was appointed general manager of lubricating sales.

• **H. S. Christie** has been named manager of the Atlanta branch office of John A. Roebling's Sons Co., Trenton, N. J. He replaces **C. G. Mullings,** recently retired after 45 years of service in the Atlanta territory. Mr. Christie has been associated with the Roebling Co. since 1945 as assistant manager of sales in the wire and cold-rolled products division.

• **Alan L. Gornick** of the New York firm of Milbank, Tweed, Hope & Hadley, has been appointed an associate of the office of general counsel of Ford Motor Co., Dearborn, Mich. Mr. Gornick will have charge of the legal phases of all tax matters for Ford.

• **C. M. Murray** has been appointed exclusive Canadian representative in the provinces of Ontario and Quebec for the sale of Poole flexible shaft couplings of Poole Foundry & Machine Co., Baltimore.

• **S. J. Ryan** has been made assistant manager of the tinplate sales division of the Wheeling Steel Corp., Wheeling, W. Va. Mr. Ryan has been a salesman, traveling out of the Chicago district office, joining the corporation in 1924.

• **Thomas P. Green,** executive vice-president of the Pollak Mfg. Co. prior to his retirement, has assumed general management of the Dinsmore & Jager Mfg. Co., Northampton, Mass.

G. REED SCHREINER, director of advertising, U. S. Steel Corp. of Delaware.

• **G. Reed Schreiner** has been appointed director of advertising, U. S. Steel Corp. of Delaware, Pittsburgh, to succeed Charles R. Moffatt, retired. Mr. Schreiner began 28 years of service in advertising departments of U. S. Steel subsidiaries when he was employed by Carnegie Steel Co. in 1919. He was made assistant advertising manager of Carnegie-Illinois Steel Corp. in 1936 and was promoted to advertising manager 2 years later. In 1947 he became assistant director of advertising of the Delaware Corp., the position he held at the time of his present appointment.

• **Harold C. Miller,** chief engineer of Charles Hardy, Inc., New York, has been elected vice-president in charge of engineering. Mr. Miller joined the Hardy organization shortly after his release from active duty in the U. S. Army. **Charles J. Hardy** has been elected a director of the corporation.

• **H. Barnett** has been appointed to the position of vice-president and general manager of Welland Electric Steel Foundry Ltd., Welland, Ont. Mr. Barnett, before joining the Welland Electric Steel Foundry Ltd. as works manager some 3 years ago, was director of research of the government-owned Electric Steels Ltd., Three Rivers, Quebec, prior to which he was for a number of years in the plant research department of the Shawinigan Chemicals Ltd.

• **David P. Williams** has been appointed to represent the Heppenstall Co., in the Pittsburgh sales district. Mr. Williams was formerly vice-president of the Vulcan Mold & Iron Co., Latrobe, Pa. **Lawrence R. Malm** also has been assigned a sales territory in the Pittsburgh district. Mr. Malm was formerly general foreman of the cold strip finishing department at the Irvin Works, Carnegie-Illinois Steel Corp. Transferred from the Heppenstall knife department at the Pittsburgh plant, **W. H. Ritenbaugh** is now a sales engineer. **E. V. Alderson,** for the last 3 years chief accountant of Heppenstall Co., Pittsburgh, has been appointed statistician for the sales department in the Pittsburgh office. Mr. Alderson served during war years as secretary-treasurer of the former Heppenstall - Eddystone Corp.

• **Frank J. Billingsley** has been appointed superintendent of methods of the Stamford Div. of the Yale & Towne Mfg. Co., Stamford, Conn. Mr. Billingsley has conducted many special investigations as a methods engineer since he was placed in the methods department in 1931.

• **Edgar J. Reichenbach** has been appointed manager, specialties and machinery division of the general sales department of the U. S. Steel Supply Co., U. S. Steel Corp. subsidiary. Mr. Reichenbach, who has been associated with the company since 1927, will make his headquarters at the company's home office in Chicago.

• **Arthur D. Patterson** has been appointed general sales manager of the Frontier Bronze Corp. of Niagara Falls. He formerly was general sales representative of the Aluminum Co. of America in western New York.

• **Norman C. Babcock,** manager of the Industrial Chemicals Div. of Carbide & Carbon Chemicals Corp., a unit of Union Carbide & Carbon Corp., New York, has been appointed a vice-president and director of Carbide & Carbon Chemicals Ltd. of Canada. Mr. Babcock has been associated with Union Carbide since 1923 and has served as manager of the Industrial Chemicals Div. since 1942.

"Round table" approach to Rolling Mill design

Putting a customer's rolling mill problem before a group of experienced engineers for detailed analysis is Bliss' way of bringing an operating need into sharp focus.

The end results take shape in some of the country's outstanding sheet and strip mill installations. Bliss designs and builds for year-in and year-out efficiency.

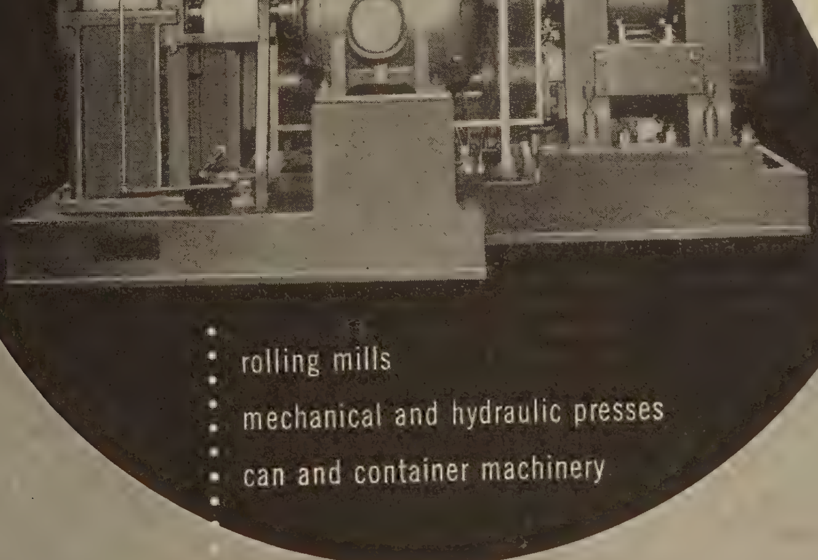
Two-, three-, or four-high mills for hot and cold rolling, single stand reversing or tandem operation, are built by Bliss for ferrous or non-ferrous application. In addition, Bliss builds cluster mills and a variety of accessory mill equipment, including mandrel type hot mill coilers, upcoilers, slitters, reels, etc.

Leading companies—here and abroad—have boosted output and cut costs with Bliss mills and accessories. Discuss your current rolling mill problem with Bliss. There's no obligation for prompt and constructive appraisal of your needs.

E. W. BLISS COMPANY

Salem, Ohio

Bliss Mint Mill. Size 10⅝" x 9".
Roller Bearing equipped Rolls.
Fully enclosed Worm Screw Downs.



STAY AHEAD WITH Bliss

- rolling mills
- mechanical and hydraulic presses
- can and container machinery

• **C. H. Hunt,** consulting engineer and head of the Pittsburgh technical organization, C. H. Hunt, Inc., and **Porter S. Kier,** comptroller of the Columbia Radiator Co., have been added to the board of directors of American Cladmetals Co. of Pittsburgh. Prior to forming his own organization 10 years ago, Mr. Hunt was assistant to the president of the Weirton Steel Co., and consultant to Great Lakes Steel Corp. and Hanna Furnace Co., subsidiaries of the National Steel Corp. Mr. Kier, besides his official relation to Columbia Radiator Co., is the secretary and a director of the East Brady Fuel-Gas Co. He was for some years connected with the Pittsburgh Coal Co. as director of budgets.

• **Herman C. Wey** has been appointed assistant to W. E. Ireland, manager of passenger car tire sales of the replacement tire sales division of the B. F. Goodrich Co., Akron, Ohio. Mr. Wey has been with the company since 1933, when he joined it as a junior clerk in the Oklahoma City district. He was sales promotion manager of the Kansas City district from 1934 to 1942 when he entered the armed services. On his return in 1946 he entered the company's sales promotion department in Akron.

• **Russell L. Dustman,** general superintendent of the River Road plant of the Chevrolet Div. of General Motors Corp. in Tonawanda for the last 4 years, has been named manager of the Chevrolet-Cleveland Parts Div. plant in Cleveland.

• **Charles J. Kolb,** formerly industrial relations director of the Colonial Radio Corp., has been appointed manager of industrial relations of the Niagara Machine & Tool Works, Buffalo.

• **William E. Butts,** vice-president of General Metals Corp. and in charge of the Oakland Iron, Steel & Malleable Div., has been elected president of Enterprise Engine & Foundry Co., of San Francisco. In addition to actively retaining his position in General Metals' operations, Mr. Butts will also direct Enterprise's activities in the diesel engine, oil burner and food processing machinery fields.

• **Charles F. Nayor** has been appointed to succeed **Harry H. Nayor,** who died recently, as treasurer and general manager of the Hastings Signal & Equipment Co. of Boston. **Marshall J. Ross** has been named sales manager; **Richard B. Dellheim,** safety consultant; **Elmer P. Atherton,** general counsel; **Frank Celona,** plant engineer, and **Ray Celona** has been placed in charge of production.

• **Dr. Clarence K. Morehouse,** formerly with the National Bureau of Standards, has been engaged to do research work on battery problems for the Winchester Repeating Arms Co. and Bond Electric Corp. divisions of Olin Industries, Inc., New Haven, Conn.

• **John S. Lennox** has retired from the General Electric Co., Schenectady, after 41 years of service. Mr. Lennox entered the test course of GE at Pittsfield in 1906. He became successively head of power test and assistant foreman of the entire testing department. From 1909 until 1923 he was a member of the transformer engineering department. After transferring to the power transformer commercial section in 1923 he was appointed traveling power transformer specialist. From 1941 until his retirement he also served as general assistant to the sales manager.

• **A. Douglas Proctor,** who for the past 9 years has been associated with Heald Machine Co. of Worcester, Mass., as sales and service engineer, has become associated as Hartford, Conn., branch manager of the Harrington Wilson Brown Co.

• **P. T. Lagrone** has been appointed manager, customer section, central station sales department, Westinghouse Electric Corp., East Pittsburgh. Mr. Lagrone entered the Westinghouse student course in 1923. Upon completion of the course, he worked in various headquarters sales departments on central station apparatus. In 1926 he entered the employ of the Arkansas Power & Light Co., later shifting to a sister company, the Mississippi Power & Light Co., where he served as manager of the Grenada Div. and later of the Greenville Div.

• **George S. Dively** has been elected president and general manager, Harris-Seybold Co., Cleveland, succeeding **Alfred S. Harris,** who died Aug. 22. Mr. Dively joined the company in 1937, served as secretary-treasurer until 1944 and since 1944 has been vice-president and general manager. He was elected to the board of directors in 1941.

• **Richard L. Wilcox** has been elected president of the Waterbury Farrel Foundry & Machine Co., Waterbury, Conn., succeeding **David C. Griggs,** who has become chairman of the board. Mr. Griggs has served 54 years in various offices, first as secretary, beginning in 1902, and later as general manager and vice-president before becoming president in 1930. Mr. Wilcox joined the company as a draftsman in 1898, advancing to chief engineer of the Bolt & Screw Machinery Div. He was elected to the board of directors in 1920 and became vice-president in 1928. He is succeeded as chief engineer by **Joseph M. Schaeffer,** who has served as assistant to Mr. Wilcox for many years, having first joined the Waterbury-Farrel organization in 1905.

OBITUARY...

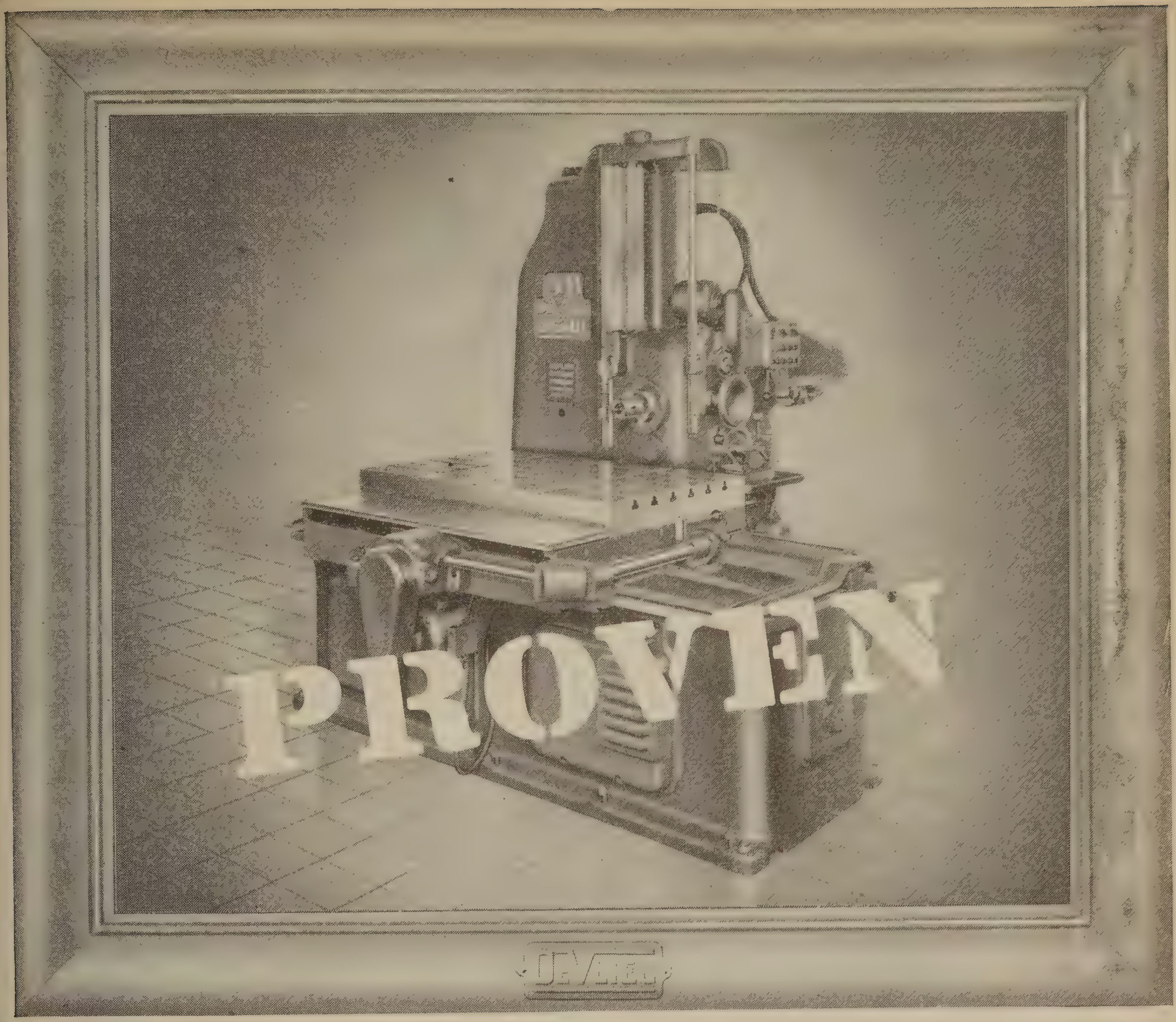
• **E. B. Mentel,** 58, sales executive at Bethlehem Pacific Coast Steel Corp.'s Seattle sales office, died Sept. 7. Mr. Mentel had been an employee for the Seattle plant, now operated by Bethlehem Pacific, for 29 years.

• **Henry P. Arbenz,** 62, with F. W. Marshall & Co., Philadelphia, for 30 years, died Sept. 14.

• **Samuel G. Eastman,** president of the Belvidere Screw Co., Belvidere, Ill., died recently.

• **Alexander M. McWilliams** died Sept. 11. He was president of the McWilliams Forge Co., Inc., Rockaway, N. J.

• **Edmund H. Titchener,** 88, founder and the president of E. H. Titchener & Co. in Binghamton, N. Y., died Sept. 22.



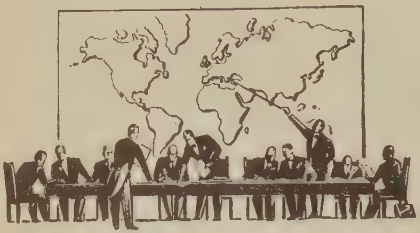
The World's Finest Boring and Milling Machine

THIS NEW model 3-B JIGMIL has automatic power means to position the spindle from one location to another accurately to within much less than .0001 (one-ten thousandths part of an inch). Thus, extreme laboratory accuracy is conveniently available with ordinary skill that would normally make such precision very high in cost. This, and many other refinements, go further to prove that the JIGMIL Idea is a totally new approach to the problems of precision boring at a new low cost.

DeVLIEG MACHINE COMPANY DEVLIEG JIGMIL **450 FAIR AVE.** **FERNDALE 20, (Detroit) MICH.**

European Letter . . .

• Recent speech of Sir Stafford Cripps gave great impression of confidence, determination and courage . . . Instruments for execution of plan are the direction of labor and tighter allocations of materials.



LONDON—Sir Stafford Cripps is, beyond question, one of the ablest and most courageous members of the present government. He has a clear and logical mind and he has, in recent years, lived down some of the more fantastic prejudices that he used to parade in public.

It was to be expected that his contribution to the government's effort to find an economic policy would be lucid, consistent between its parts and expounded with great skill of advocacy. There can be no doubt that his recent speech and broadcast have given a greater impression of confidence, determination and courage than all the rest of the Ministerial pronouncements put together.

It would be pleasant to go on to say that his export plan marks the turn of the tide and the beginning of a policy that will get the country out of its economic difficulties. Unfortunately, that would not be true.

An export plan is, indeed, badly needed, and Sir Stafford Cripps was wholly right to produce a realistic plan in detail rather than to rely on generalized exhortation. His plan is arithmetically perfect—in fact, rather too precisely perfect. It is very doubtful whether anybody could produce a better export plan than this, and it goes without saying that every effort must be made to carry it out in full.

And yet the major doubt remains: it is almost impossible to believe that it will work. Even the most perfectly designed machine will not work if the motive power is lacking. And it is the motive power behind any and all of its economic schemes that the government persistently ignores. Unfortunately, it has to be said that by far the best plan the government has yet produced is the one that most conspicuously illustrates its ability to see every point except the main one.

THE instruments on which Sir Stafford Cripps places his main reliance for the execution of his plan are, as was expected, the direction of labor and tighter allocations of materials. It is very doubtful whether anybody believes that the direction of labor will work to any significant extent. It has been handled in a very gingerly way by the Minister of Labor—as is, indeed, proper in a democratic community—and it is not apparently to be applied, in a positive sense, to any but unmarried men. It will be of some use in preventing a deterioration in the labor supply available for the export industries; but it should not be counted on to secure any improvement.

Allocation of materials is a more powerful weapon. But it is also one that is much more difficult to use for such a variegated purpose as the stimulation of exports. The immediate producers will no doubt get their priority allocations, and so perhaps will their direct suppliers. But who will look after the more remote suppliers, whose contribution is no less essential?

Reprinted from The London Economist by special permission.—Ed.

If the way is really to be cleared for exports, then priority allocations for direct exporters are not nearly enough; the allocation machinery must go down to every ha'porth of tar that goes into exports. This will be the more necessary because Sir Stafford Cripps made it clear that there is to be no attempt to reduce the clamant demands of the home market, they are merely to be held back by the allocation machinery.

The pressure of demand on the supplies available for the home market will be greatly increased, and anyone who has any experience of allocation knows how great a strain this will throw upon the control machinery—even if it be supposed that there are enough competent controllers to man it.

THERE is still another major difficulty, perhaps the greatest of all. Even if the goods can be produced, can they be sold? Sir Stafford did, indeed, mention this difficulty, but not in such a way as to suggest that he put it where it should be—at the very center of his plan.

There is hardly a country in the world that is not engaged in cutting down its imports and expanding its production for exports, and it is not enough to say that if British industry cannot sell one thing it must sell another. The central factor—and it will soon be dominant—is that of price, and unfortunately there is all too much reason to believe that British prices are, in general, a long way above the competitive level.

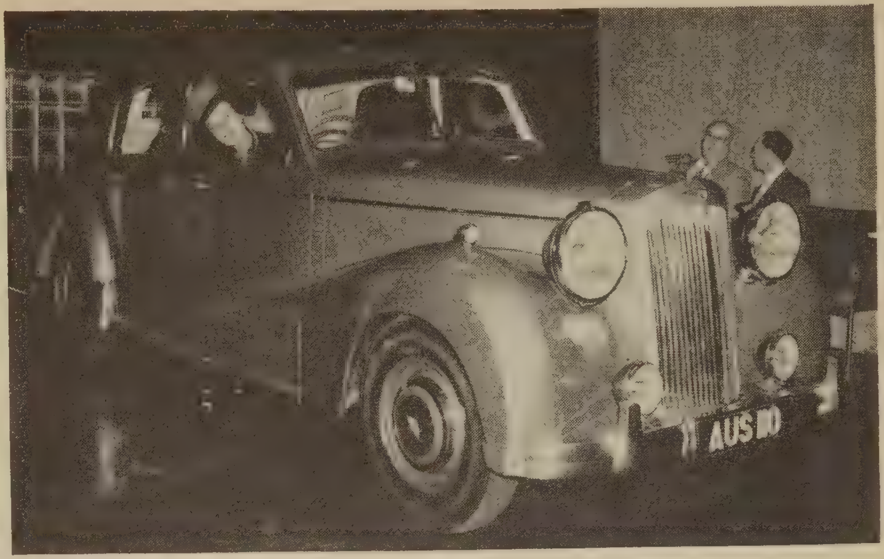
Moreover, an economy based on directions and allocations, on wheedling, fighting and arguing for every essential component, is one—as everybody now knows—that puts costs up to astronomical levels. If industry is to meet its export targets, it will have to do a great deal of selling at a loss, and it cannot be expected to be very enthusiastic about doing so.

There is, in short, no department of the national economy where the policy of defying natural economic forces by the brute force of compulsory controls works under a greater disadvantage than in the stimulation of exports. And by the same token there are few departments where the opposite policy could be expected to be more effective.

The only way by which the export industries will get the labor they need at the wages they can afford to pay is by restoring a certain amount of competition in the labor market and making a job once again something that is prized. The only way in which exporters will get the materials they need—including the ha'porth of tar—is by making other people less clamorously intent on pre-empting them for other purposes—that is, by reducing competing demands and not merely trying to hold them back by barriers of red tape.

And the only way in which industry can be made enthusiastic about exporting is by making it at least as profitable to sell abroad as to sell at home.

UNFORTUNATELY, Sir Stafford Cripps did not discuss this alternative policy—unless an off-hand dismissal of "the old-fashioned method of . . . producing a poverty-stricken and partially unemployed working population" is to be regarded as discussion. It is a sad state of affairs when responsible Ministers deliberately close their minds to a reasonable line of argument and will mention it only in the form of caricature. No responsible person wants mass unemployment, but only the restoration of a little elasticity to the labor market. Nobody wants a poverty-stricken population, but only that the community should achieve an equation between its energies and its appetites. Do Ministers never wonder why their plans do not succeed? Do they really believe that it is always somebody else's fault? Or will they eventually open their minds to the possibility that their economic system is limping for lack of motive power?



FOR AMERICAN MARKET: *Four new British Austin auto models have been put on display in New York as a part of the British drive to sell $15 million worth of cars in this country each year. This one is in the $4500 to $5000 class. Two others are expected to sell from $1200 to $1400.*

Reports on Diffusing Chromium Into Steel From Volatile Compound

Washington

• • • **Wartime developments** in the German "chromizing" process for diffusing chromium from a volatile chromium compound into steel to improve the surface properties of metal products are described in a report now on sale by the Office of Technical Services, Dept. of Commerce. The report was prepared by investigators for the British Intelligence Objectives Subcommittee.

The chromizing process, developed and patented by the firm Metall & Diffusionsgesellschaft. A. G. at Dusseldorf, was known in Britain before the war, the investigators state. Their investigation was concerned only with wartime developments.

All six of the firms using the process made the same type of products, according to the report. These were; valves for controlling the flow of various fluids, preheater tubes for preheating air for combustion in the engines of destroyers, bolts which were chromized before threading, and hose connectors for milk delivery hoses and milk cans.

The valves were especially resistant to corrosion. The chromized layer on the bolts was actually hardened by the threading operation. Some of the preheater tubes (the air passes up the tubes with the flame around the outside) were said to be in good condition after operating 19 months at 750° C. Chromizing of the hose connectors could be performed over welded joints.

Aside from some experimental work, the investigators did not find any new diffusing processes in Germany. Some unusual furnaces were examined, however.

A special electric chromizing furnace at the A. Nolzen firm, Remscheid, consisted of an outer insulated box-shaped enclosure with a horizontal chamber through the middle to hold the retort. The whole structure was split horizontally so that the top half could be lifted away by a crane, permitting the retort to be placed in the furnace more easily and to be left there to cool without being removed from the furnace bed. By employing three lower hearths and one top part, two uncovered beds could be used in the loading cooling stages while the third was being used for a heating charge.

Several interesting furnaces were observed at other firms using the chromising process, the report states.

The report (PB-52873; Report on methods of gaseous metal treatment; 22 pp.; mimeographed, 75¢) reviews the basic chromizing process as developed by the Metall & Diffusiongesellschaft and describes the novel furnaces and other developments noted by the investigators. A schematic sketch of the Nolzen furnace and two other furnaces, a diagram of a chromizing retort, a complete drawing of a vacuum retort, and a list of German patents covering the process are also included.

Orders for the report should be addressed to the Office of Technical Services, Dept. of Commerce, Washington 25, D. C., and should be accompanied by check or money order, payable to the Treasurer of the United States.

Industrial News Summary...

- ***Transportation Crisis Grows***
- ***Freight Car Plan Falls Short***
- ***Marshall Plan Impact Awaited***

WITH the output of consumers goods going lickety-split towards alltime highs, the foundation and support of such production—transportation—is rapidly reaching a national crisis. The steel freight car production battle is headed for Washington again.

So severe had become the need for a quick and satisfactory solution of the freight car and pipeline shortages that some steel industry executives this week are privately expressing the opinion that diversion of steel from consumer needs to transportation channels might be the sole method of preventing future and more serious bottlenecks.

The celebrated 10,000 car a month freight car program which was to have been a fact by October is shot to pieces. During the last 3 months of this year output of freight cars will fall 2000 to 3000 cars a month short of the major goal.

While both railroad car builders and the steel industry present figures to indicate a blameless record for the freight car program failure, the situation is going from bad to worse. Cars are being retired at a much faster rate than they are being replaced—a condition which has been going on since war days when some authorities refused to consider the freight car problem on a par with ammunition requirements.

Early phases of the steel vs. freight car argument will probably center around discrepancies in the shipments figures reported by steel companies to the Office of Defense Transportation as compared with those of the American Railway Car Institute on steel tonnages received for new cars. It is now a battle of the institutes.

PROBABLY no one group can be accurately tagged with sole responsibility for today's freight car shortage. The steel industry has conclusively shown that steel in a total tonnage necessary for the freight car program has been shipped to carbuilders. Carbuilders have shown just as conclusively that they have not received enough steel to produce 10,000 cars a month. The rub is in the distribution of the various steel products to all the carbuilders participating in the program. Unbalance in inventories and component parts is the most serious drawback to successful completion of the 10,000 car a month program.

The Washington argument is expected to be hot, defensive on both sides and generally a "whodunit" conference. But this will not produce the freight cars needed to support both the domestic economy and the Marshall Plan when and if it goes into operation. If the steel industry had sat down with the car builders and mapped out requirements and commitments company by company, this would have licked the freight car production program. This method could not be used because of the danger that such a meeting would run afoul of the Dept. of Justice. The steel industry as a group has no desire to be involved in anything which remotely suggests fixing quotas or deliveries.

Steel officials shiver when they consider the possibility that the government may set up an allocation program for freight cars. Imposed allocation is the last thing industry wants at this time. During 1946 governmental allocations and directives almost wrecked the normal distribution of steel products, and a reimposition of such methods might repeat that fiasco.

SOME steel consumers suspect, but many don't know yet, that well intentioned delivery promises on their steel quotas for the fourth quarter are about to be smashed to smithereens. Wholesale cutbacks are to be made by several large steel companies, huge backlogs and carry-overs have so disrupted order books that much of this tonnage must be written off before the year end if order is to be obtained in 1948.

Most painful operation will be the slashing of fourth quarter promises on flat-rolled products. While many companies will use different methods to bring their books more into line with production possibilities, it all adds up to the same thing—less steel to consumers than they thought they would get and what they had been promised they would receive. Some users may receive a quota cut for December amounting to 75 pct of total commitments for that month—that is the outlook for one major steel producer.

As the State Dept.'s report on the European requests for the Marshall Plan becomes clear, the impact on steel officials and steel users will be terrific. It is indicated that over the next four years the Marshall Plan may call for about 2 million tons of scrap a year to be purchased in the United States. With scrap a short item already in this country, it takes little imagination to guess what effect the purchase of scrap for export will have on eastern scrap markets which during the last two years have served as a big reservoir for midwestern consumption.

Although the State Dept. has used dollar figures in talking about "crude and semifinished steel," it looks like the Marshall Plan could call for more than 2 million tons of ingots and semifinished steel per year. Shipment of such a large amount of steel represents a further loss of scrap to this country and a corresponding lack of control over the volume of finished steel products in this country. An estimate of sheet and tinplate required by the plan is from 300,000 to 400,000 tons of these short items per year over the next 4 years. Major rub, however, is that the bulk of the sheet and tinplate is wanted for 1948.

Steel ingot output this week for the country is unchanged at 95 pct of rated capacity. The scrap market is showing a strong undertone but no price changes were made at major centers.

• **ALAN WOOD BLAST FURNACE DOWN**—Mills and foundries in eastern Pennsylvania are frantically seeking supplies of pig iron and scrap since being notified that Alan Wood's large furnace must close down for relining. This furnace, last relined in 1941, has since produced 1.6 million tons of pig iron. The agitation in the market is worsened by a rumor in the trade since last August that one of Bethlehem Steel Co.'s furnaces must be shut down for relining. One mill has bought a large tonnage of Colorado Fuel & Iron Co. pig iron for shipment from Pueblo, Colo. A number of foundries in eastern Pennsylvania and around metropolitan New York are reported to have bought Pueblo iron. One eastern Pennsylvania mill is reported to be studying the possibility of reactivating the old Chester, Pa. furnace.

• **BRITISH OUTPUT**—Production of steel in Britain in August showed a big increase over the low level reached in July, and was at a greater rate than in August last year. Output in the early part of August was affected by holidays but expanded during each week of the month, exceeding a rate of 13,500,000 tons a year in the final week. The Iron and Steel Federation points out that this rate can only be kept up if coke supplies are adequate to enable pig iron production to be expanded to the required level. The government's steel target for 1947 is 12,500,000 tons. It was stated last month that to obtain this production would need to be stepped up to an annual rate of 13,500,000 tons for the rest of the year.

• **BUSINESS TRIPS TO GERMANY**—War Dept.'s new relaxed rules governing admission of American business men into Germany has resulted in a lively rush of applications to visit the United States-British zones for commercial purposes. Among the U. S. businessmen and businesswomen now traveling in the U. S.-British zones on business authorized by the department's Military Permit Section are the following: Harold L. Robitaille, Columbia Ship Service Corp., of New York; Robert T. Stolzle, aircraft agent, of Iowa, La.; Francis A. Finder, Eagle Precision Mfg. Co., of New York; Dorothea J. Adam, Metropolitan Tool Supply Co., Inc., of Maplewood, N. J.; Gerhard P. Bierbach, Annessen Electric Co., of New York, and Justin Loewengart, of Transcontinental Rubber Co., of New York.

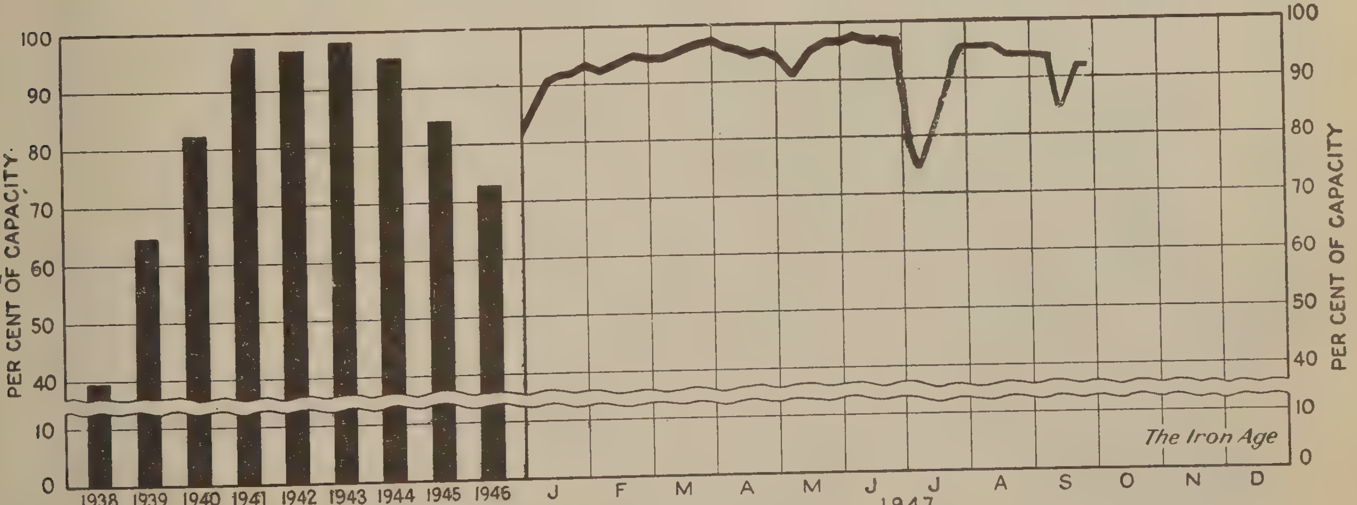
• **JAP STEEL CAPACITY**—Japanese electric steel furnaces with capacity in excess of 100,000 metric tons, together with integrated rolling capacity up to 300,000 metric tons, can be retained for use until June 30, 1948, although designated for removal under the reparations program. Under the original directive to SCAP, such authority for retention of iron and steel, as well as soda ash, plants was scheduled to expire last June 12. Officials say, however, that this extension as approved by the Far Eastern Commission because of continued coal shortages in Japan, in no way delays designation of such facilities for removal under the reparation program at a later date.

• **PORTAL SUITS**—Contrary to public opinion, the portal-to-portal issue is not quite dead. In the Pittsburgh district about $200 million in claims have been killed but hearings on motions to dismiss began recently on 34 remaining suits totaling over $367 million. A $180 million action against Carnegie-Illinois heads a list that includes many big metal producers and fabricators.

• **BUILDING MATERIAL** — Continuing the decline started three months ago, the July drop of 1.8 pct brought production of building materials down to within .9 pct of the levels of a year ago according to the Dept. of Commerce index. Eleven of the 19 items included in the Commerce composite index showed declines, some of them substantial. These included cast iron soil pipe which reached a new low for 1947 (31 pct above 1939 production) and wire nails (3.3 pct less than 1939 output). Other metal items showing a production decline were concrete reinforcing bars, cast iron radiation, rigid steel conduit, water heaters, and range boilers. On the other hand, production of fabricated structural steel and mechanical stokers set new production highs during July, 157.3 and 90.8, using 1939 as 100 in the index.

• **AFRICAN ORE**—Following a rather protracted inactive spell, Mystic Iron Works, Everett, has resumed importations of African ore. A consignment was received in September. Like previous lots, it did not represent a full cargo, however, although it was sizable. Such importations are not possible except when vessels are coming to America empty to pick up cargoes of manufactured goods or foodstuffs.

Steel Ingot Production by Districts and Per Cent of Capacity

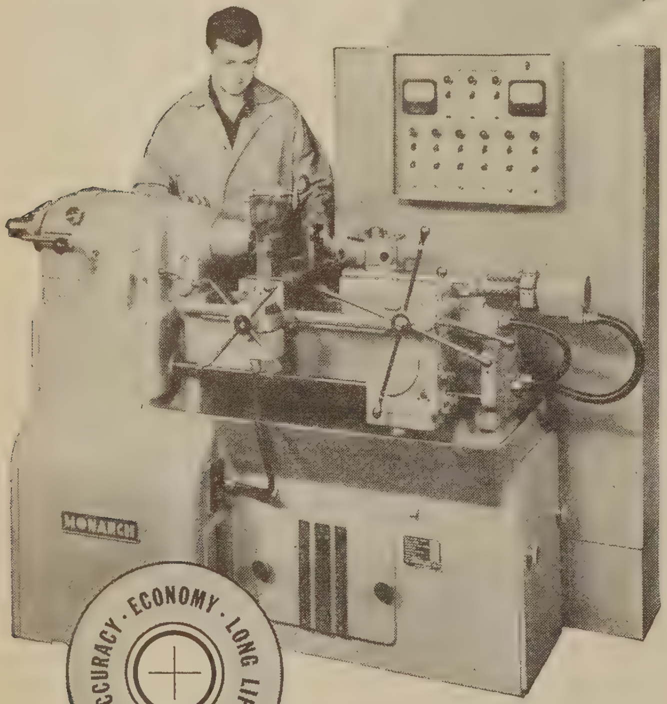


Week of	Pittsburgh	Chicago	Youngstown	Philadelphia	Cleveland	Buffalo	Wheeling	South	Detroit	West	Ohio River	St. Louis	East	Aggregate
September 23...	101.0	94.5	89.0	94.0	94.5	102.0	100.0	99.0	103.5*	104.5	106.0	87.0	94.0	95.0
September 30...	103.5	95.0	89.0	92.0	94.5	102.0	90.0	99.0	101.0	107.0	96.0	77.5	94.0	95.0

* Revised.

Set it...
Forget it
MONARCH

You can pre-select any 9 spindle speeds—up to 5000 RPM any 6 feeds—from 1/8″ to 16″ per min. on the MONARCH SPEEDI-MATIC "World's fastest hand screw machine"



Automatic electronic speed and feed change—in a wide, stepless range—saves as much as fifty per cent on production times, and results in better finishes, closer tolerances, too.

But gearless, stepless all-electric drives are only part of the reason why you'll get *precision peak production at a profit* with the new Monarch Speedi-Matic. Dollar for dollar and second for second, we'll match its performance against any other machine of the same capacity (up to 7/8″ bar stock) on lots of 25 to 500 or more. Like additional facts? Ask for bulletin 1902.

THE MONARCH MACHINE TOOL CO.
Sidney, Ohio

ACCURACY · ECONOMY · LONG LIFE
Monarch
TURNING MACHINES

FOR A GOOD TURN FASTER—TURN TO MONARCH

More Fireworks Due in Collapse of Freight Car Building Program

Unbalanced Inventories Tell Part of Story but More Facts Seen Needed

By GEORGE F. SULLIVAN
Pittsburgh Regional Editor

Pittsburgh

• • • **The question of** why the nation's freight car building program is still about 3000 cars a month below schedule is due to come to a head very soon. The solution is complicated by a discrepancy between the amount of steel reported shipped to the car builders and the amount they report received for freight car construction. September output of car builders and railroad shops is expected to be in the neighborhood of 7000 units. Reliable observers see little possibility of substantially bettering that figure in the remaining months of this year.

The car shortage has been accentuated by a series of events which began with the railroads' failure to order cars in volume as soon as the war ended—they were awaiting a rate increase. When they did order, Washington observers say CPA should have stepped in and allocated steel—but it didn't. Finally, the 1946 steel and coal strikes cost about 25,000 cars.

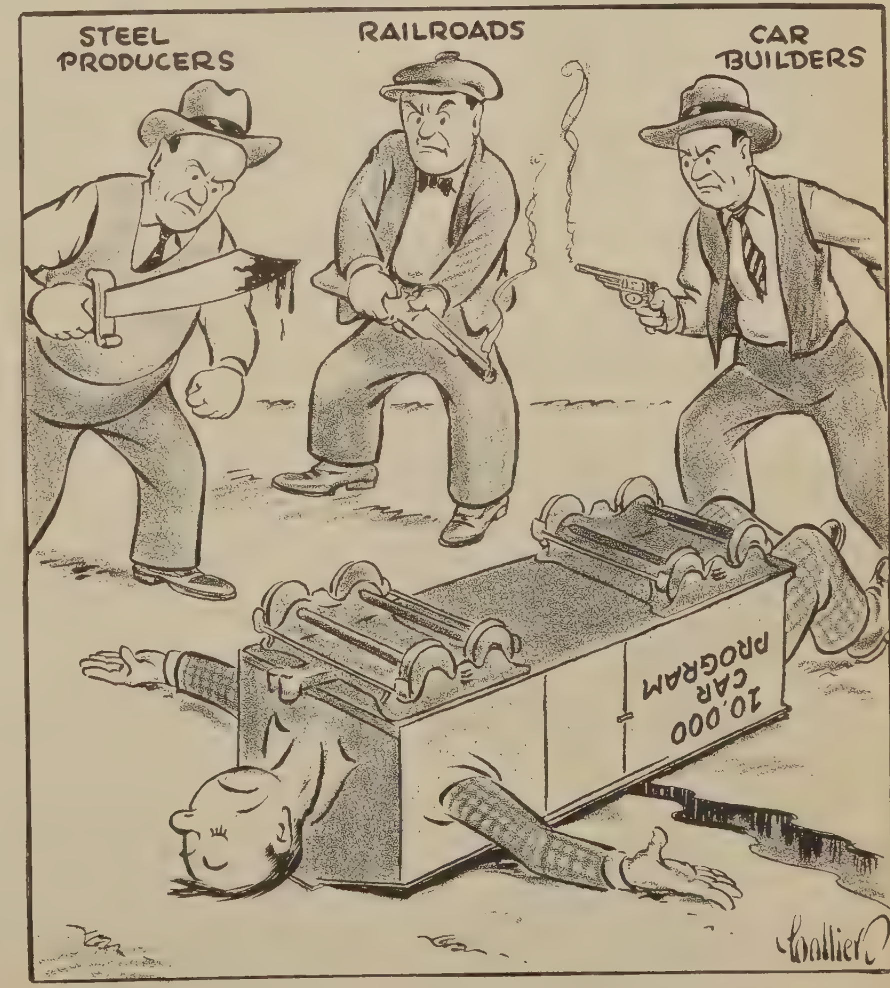
Since no car builder will castigate his steel supplier in today's seller's market and the steel companies are loath to offend firms they want to retain as customers in tomorrow's buyer's market the affair has become a battle between institutes, with indications that it may soon wind up in Washington again.

In this cold war there seems to be but one point of agreement: The car situation is going from bad to worse. The argument boils down to this: Steel producers say they have been shipping railroad shops and car builders enough steel—all the steel they agreed to ship and a little more; the car builders say they are not receiving adequate steel for freight car construction to reach a production rate of 8500 cars a month—the figure set as their share of the 10,000 car a month program agreed upon in Washington this spring.

It is believed in informed quarters that further discussions of the car building program will hinge around agreements made at Washington conferences in February and March of this year. At these conferences the car builders met with officials of the Office of Defense Transportation and the steel producers' freight car task committee also met with ODT officials. The car builders and the steel producers never sat down at the same table. The former were willing to do so; the steel producers were not. Steel sales executives said they declined for fear of Justice Dept. action. They would have been meeting with customers, fixing quotas and allocating markets and they had no guarantee against prosecution for technically violating the antitrust laws.

Just what was agreed upon at the Washington meetings? Early in February the Civilian Production Administration announced that steel mills had agreed to schedule approximately 165,000 tons of steel monthly for new car construction, of which about 65,000 tons was to be for maintenance and repair orders. In February the American Railway Car Institute issued a chart headed "Steel Requirements of Domestic Freight Car Builders," in which the monthly steel requirements of a 10,000 car a month program were set at 179,000 tons. (THE IRON AGE, Feb. 13, 1947.) In April ODT reported that the steel industry had agreed to furnish 210,-

Another Whodunit



063 tons of steel monthly to freight car builders during July and August. (THE IRON AGE, April 10, p. 122.) This was a compromise, as ODT, on the basis of information developed by the industry committee had sought a 239,000-ton a month commitment. (The 210,063-ton figure included 171,000 tons for new cars and 68,000 tons for maintenance and repair orders.)

This school of thought points to production figures which show that railroad car shops have now tripled their pre-April output and that had the independent car builders done the same the 10,000-car schedule would be practically attained.

ODT feels that private contractors are reneging on their agreement in diverting steel to other uses and that further increases in steel shipments would be privately diverted to the car builders' other products. The ODT implication is that this would be taking unfair advantage of other steel consumers.

The car builders counter with the assertion that there was a misunderstanding on the part of ODT and the steel companies—that both had merely assumed the originally planned 165,000 tons was to go only into domestic freight cars. The car builders say they think it unfair to assume that they would give up production of other products to concentrate on domestic freight cars.

The accompanying table shows shipments to the builders of freight cars as reported by the steel industry through two sources as well as steel reported received by the freight car building companies (not including railroads) for freight car construction.

From the American Iron & Steel Institute and ODT figures in the table it appears that the steel companies had fairly well lived up to their agreements — including some anticipation of the program which produced overshipments in the months preceding July. July was a bad month because of the heavy steel loss caused by the coal mine "holiday strike." From the American Railway Car Institute data, it appears that the steel companies had not met their commitments.

It is believed that the next phase of the controversy will settle around attempts to reconcile these figures. Sales executives interviewed in some of the larger steel companies say they are prepared to back up the figures supplied to ODT with actual invoices. Car builders assert they haven't received the steel needed for new car building; they insist that no shortage of labor is responsible.

Car building purchasing agents are not simply sitting back and waiting for deliveries. Their aggressiveness is well known in steel circles as they constantly try to speed up shipments of critical items. The products they indicate are in particularly short supply are those for which national demand is also high: Sheets, plates, structurals and some of the larger sized bars.

Some of the unbalance, according to several car building company purchasing men who for obvious reasons prefer not to be quoted directly, is due to their location. They say this is because of steel company unwillingness to absorb freight on some products. Some eastern mills are unwilling to ship sheets into the Chicago area, the freight absorption is high and they can serve local customers. In the Pittsburgh district, plate is reported particularly tight. Again, this is said to be due to the freight absorption angle.

The following table shows the car delivery picture to date. Furnished by the American Railway Car Institute, it shows that its members are operating at less than half their capacity. The railroad car shops, it will be noted, actually made more than their 1500-car share of the program during July.

	Car Builders	Railroad Shops	Total
January	2,265	717	2,982
February	1,784	509	2,293
March	2,439	444	2,883
April	3,489	634	4,123
May	3,131	798	3.929
June	4,230	1,297	5.527
July	4,846	1,033	5,879
August	4,346	1,617	5,963
	26,530	7,049	33,579

Freight Car Steel Data

(All figures are net tons)

	American Iron & Steel Institute: Shipments of steel for freight cars			Office of Defense Transportation: Report of shipments by steel companies to car builders				American Rwy. Car Institute: Steel received by independent car builders for freight car construction
	To R. R. shops	To independent builders	Total	To car builders	To railroads	To parts makers	Total	
7,000-car a month program								
March.....................	53,425	132,270	185,695	109,000	51,000	54,000	214,000	110,000
April.....................	56,912	127,515	182,427	109,000	60,000	29,000	198,000	109,000
May.....................	50,776	144,984	195,760	113,000	51,000	33,000	197,000	113,000
June.....................	54,431	133,297	187,728	111,000	46,000	32,000	189,000	119,000
10,000-car a month program								
July*.....................	......	......	......	95,000	38,000	30,000	163,000	98,000

* Reflects first effects of coal mine "holiday strike."

In an effort to get more detailed data on the items that are short in each of the car builders' plants it is understood that the Railway Car Institute is asking its members to begin furnishing this month a breakdown of steel receipts by products and to furnish the same information on their inventory position. It is hoped that this may take out some of the unbalance.

Several suggestions have been advanced for improving the overall picture. One can be effective only when steel mill schedules are a little less hectic so that a 60-day instead of a 90-day lead time could be used in the car shops. This would involve more exact scheduling by builders and more exact delivery times by mills.

Another suggestion for improving the builder's position is that the car builders sit down with the steel companies and go over their requirements in detail. But unless the Dept. of Justice specifically approved the move it is doubted that steel producers would agree to such a plan.

Use of high strength low alloy steels for cars has also been proposed. To date its application is not widespread in this field but it has been pointed out that it would stretch the supply of rolled steel.

* * *

New York

• • • **"Steel companies have** shipped more steel for domestic freight car construction than called for under the Office of Defense Transportation program," Walter S. Tower, president, American Iron and Steel Institute, said at a special press conference here Monday. "In spite of those high shipments of steel, delivery of new freight cars for domestic use has lagged since the program started and latest reports indicate that September production of cars is short of the goal," Mr. Tower said.

Under the program which was established last February, steel companies agreed to supply builders of freight cars, including railroad car shops, with 163,000 tons per month during April, May and June. Sixty thousand tons per month of that tonnage was scheduled to be used for maintenance and repair work, and the balance was scheduled to be used for domestic car production only. Steel shipments exceeded the program during March through June by approximately 131,000 tons.

The program was established to alleviate the shortage of domestic freight cars, with the understanding that the steel required would be specified by carbuilders, component parts manufacturers and railroads only for the new domestic car and car repair programs. However, more than 16,000 foreign cars were shipped in March, April, May and June.

In connection with the shipments to the carbuilding companies by the steel industry which eventually went into cars for export, Mr. Tower explained that the agreement with the ODT was for steel for a domestic car program and that to him any export shipment of cars at all represented to his mind a diversion from the program. Thus, the statistics of the ODT on **steel shipments to the car** builders for the car program are, according to Mr. Tower, completely above and beyond some mill allocations that car builders may have had with steel companies before the misbegotten ODT carbuilding programs got under way.

According to the statements made at the conference by Mr. Tower it was obvious that there is strong disagreement between the carbuiders and the steel industry on the amount of lead time required by the carbuilders. Carbuilders, remembering wistfully the 120 day lead time they state the WPB allowed them, chafe mournfully at the 60 days deemed wise by the steel companies.

As far as Mr. Tower was able to state, there has been no consolidation of buying efforts by the various carbuilders, with the possibility of out of balance inventories resulting. An ambitious car maker may have booked large orders, and stocked heavily on some steel items only to find himself stymied because some other eager carbuilder is doing the same thing, but has started with other steel items. Thus, on the books of the steel industry, shipments of the required tonnages of all the various steel items needed for carbuilding have been made. As far as the carbuilder is concerned, his inventory may be out of balance. The existence of a detailed steel product inventory by carmakers, promised by the car institute, should throw some light on this subject.

Forms Equipment Company

Buffalo

• • • **The Paullin** Equipment Co. has been formed to deal in new and rebuilt mechanical and electrical equipment. In addition to reconditioning compressors and vacuum pumps, the firm will act as consulting engineers and manufacturers' agents. Edward M. Paullin, former assistant manager of the compressor division of the Worthington Pump & Machinery Corp., is president.

BIG REACH: *To load and unload river barges where a suitable pier is lacking this special LeTourneau crane has a 150-ft reach and 25-ton capacity. It can also be used for building construction where high lift and heavy capacity are required.*

Special Pipe Exports To Saudi Arabia Are Approved by Harriman

Washington

• • • **Further evidence** that the Administration is shaping its foreign policy to present the Marshall Plan to the public as an accomplished fact was disclosed last week in Secretary Harriman's approval of special pipe exports for Saudi Arabian oil fields.

Approval by Mr. Harriman of approximately 20,000 tons of fourth quarter steel exports to Saudi Arabia indicates that the Administration has decided to make full use of the ex quota provisions of existing export control regulations to get vital industrial materials to Europe.

Mr. Harriman is reported to have been guided by this reasoning in his approval of the export licenses for Saudi Arabian fields: (1) The European economy will require huge supplies of oil for rehabilitation under the Marshall Plan; (2) The U. S. is consuming domestic supplies of oil virtually as fast as they can be refined; (3) The U. S. Navy, hampered by limitations of domestic output, probably will be forced to buy larger quantities of oil from Saudi Arabia in the near future.

Officials of the State Dept. and Defense Dept. are reported to have advised Mr. Harriman of the importance of the Near Eastern oil fields in their relation to world supply. This advice undoubtedly influenced Mr. Harriman in arriving at his decision to grant the requested licenses.

The two companies involved in the export license application are the Arabian American Oil Corp. and the Trans-Arabian Pipe Line Corp. Company officials point out that Senator Wherry, who complained loudly about the proposed exports, erred in his figures of "40,000 tons of pipe for export this year and 500,000 tons over a three-year period." Actually, the two firms seek to export 17,428 tons of steel pipe, 165 tons of other pipe, 2799 tons of steel products for one project, and 4000 tons of steel pipe, 1600 tons of casing, 9000 tons of other tubular goods and 4000 tons of steel products for a second project. A 1000-mile pipe line now under construction will eliminate the necessity for employing about 70 tankers which would otherwise be required, they say.

Current world consumption of oil is estimated at 7.7 million barrels per day. The oil industry estimates that demand will have jumped to 10.4 million barrels per day by 1951. "We've got to close the widening gap between supply and demand," one industry official told THE IRON AGE. With domestic demand nudging close behind supply, the construction of additional facilities overseas becomes a matter of paramount importance to the domestic economy, the industry believes.

Supreme Court to Hear Cement Case Argument

Washington

• • • **The Supreme Court** on Oct. 20 and 21 will hear argument in the Federal Trade Commission's case against the Cement Institute and producing companies in the industry. Striking at the industry's use of a multiple basing point system of pricing, FTC has stamped the case as one of the most important in its 30-year history and believes that a court decision in its favor will outlaw practically all basing point systems. In any case, a favorable decision in this case would give FTC a powerful weapon in its current case against the steel industry.

However, the judicial history of the cement case does not reflect favorably on the Commission. The Seventh Circuit Court of Appeals, on Sept. 20, 1946, set aside an FTC order issued against the multiple basing point system as used in the cement industry. In a strongly worded decision, the Court stated that the legality of basing point systems was, in its judgment, an issue to be decided in the legislative domain and not in the courts.

On Jan. 21, 1947, FTC petitioned the Supreme Court for a writ of certoriari in this case. The court granted the writ on Mar. 10, but did not get to the case before adjourning for the summer.

Now scheduled for the first week of argument, the case will come before the Court on Oct. 20 and 21, with 4 hours of argument each day. Attorneys for the industry have been given 5 hours in which to plead their case and the remaining 3 hours will be taken up by government attorneys.

Coming Events

Sept. 28-Oct. 3 **American Institute of Mining and Metallurgical Engineers,** regional meeting, Denver.
Oct. 2-3 **Gray Iron Founders' Society,** annual convention, Milwaukee.
Oct. 2-4 **Society of Automotive Engineers,** aeronautics meeting, Los Angeles.
Oct. 6-7 **Packaging Machinery Manufacturers Institute,** annual meeting, Springfield, Mass.
Oct. 6-8 **American Gas Assn.,** annual convention, Cleveland.
Oct. 9-10 **Porcelain Enamel Institute,** annual meeting, Cleveland.
Oct. 16-17 **National Conference on Industrial Hydraulics** (formerly Hydraulics Machinery Conference), annual meeting, Chicago.
Oct. 18-24 **National Metal Exposition,** Chicago.
Oct. 20-21 **Society of Automotive Engineers,** production meeting, Cleveland.
Oct. 20-22 **American Society for Metals,** annual meeting, Chicago.
Oct. 20-23 **Iron and Steel and Institute of Metals Divisions of AIME,** annual fall meeting, Chicago.
Oct. 20-24 **American Welding Society,** annual meeting, Chicago.
Oct. 20-24 **American Industrial Radium and X-Ray Society,** annual meeting, Chicago.
Oct. 30-Nov. 1 **American Society of Tool Engineers,** semiannual meeting, Boston.
Oct. 31 **Illinois Mining Institute,** annual meeting, Springfield, Ill.
Nov. 7-8 **Annual Conference on X-Ray and Electron Diffraction,** Mellon Institute of Industrial Research, Pittsburgh.

Bureaucracy Dreams of New WPB to Administer Marshall Plan

Washington Assumes Congress Will Approve Most of The $15.81 Billion Needed

Washington

• • • Congress still is awaiting official notification of the $22 billion Marshall Plan, but government agencies this week began outlining the United States part in the huge rehabilitation program. Capital bureaucracy, proceeding on the assumption that Congress will approve all or most of the $15.81 billion estimated by the Paris conference to be the U. S. share of the European relief plan, is trying to visualize the type of administrative agency best suited to carry out the four-year program of needs.

Secretary Harriman's committee of 19 members studying availability of U. S. goods for government export is toying with the idea of a modified War Production Board to administer the program. For the time being, this committee feels it can get along under existing export regulations, the Second Decontrol Act and statutory authority granted by the 80th Congress "to carry out the foreign policy of the United States."

After deciding on the type of agency they would like to see set up, the Harriman committee is faced with several other questions requiring answers approved by the White House:

(1) Does the U. S. want to make contracts with restrictions such as those attached to the British loan? The State Dept. hopes not.

(2) Should the administering agency be empowered to review constantly over the four-year period the changing requirements of the European economy and to modify U. S. aid as necessary? Most officials agree to this, although such power will place the agency in a good position to perpetuate itself by claiming in 1951 that its job is not completed.

(3) What channels of finance shall the U. S. establish? Shall we use collective facilities of the World Bank, the Export-Import Bank, the Commodity Credit Corp., and other existing agencies, or shall we establish a European RFC or similar new agency?

(4) How extensively shall the executive agencies of government involve themselves? Certainly the departments of State, Commerce, Agriculture, and Interior are concerned. How many others?

(5) Who shall have the authority to work on currency stabilization problems? Fluctuating currencies can seriously dissipate value of any relief shipments.

Thus far, only three categories of steel have been mentioned. The conference agreed that Europe ought to be producing 55.4 million tons of crude steel by 1951, of which Western Germany should contribute 12.7 million tons. The 1951 goal is 60 pct above 1947 and will be 25 pct above the total for best prewar years.

The 16 nations participating in the Marshall Plan and Western Germany will require $1,838,000,000 worth of steel and allied commodities (including raw steel, ore, and other items) over a four-year period, it was disclosed this week with release of the first half of the full report of the Paris Committee of European Economic Cooperation.

Immediate objective for the European iron and steel industries is "full use of existing capacity," the participating nations agreed, adding that "full employment of existing capacity will depend on supplies of raw materials and semifinished products coming forward in considerably larger quantities than they are doing in 1947."

Of the $1.838 billion worth of steel estimated to be essential to getting the European economy off the dole by 1951, the United States isexpected to contribute $1.565 billion worth. Other American nations are expected to come through with $127,000 in steel goods, and the rest of the world, $146,000 worth.

"The increase in production in the course of 1948-1951 in the 16 participating countries, namely 16 pct for crude steel and 16 pct for finished steel, is due chiefly to new capacity," the conferees disclosed in their report. "In addition, new plants will be coming into operation in replacement of works which are to be shut down as soon as their output can be spared, and a great deal of modernization and re-equipment will be carried out."

The entire question of capital plant and equipment expansion in the European steel industry will be taken care of by participating countries, it is estimated. But certain vital items, such as continuous wide strip mills, can come only from the United States.

In general, the Paris conferees regard Europe's steel future this way:

"Expansion of steel production will clear the way for a considerable increase in engineering output, particularly in those branches of the engineering industry which provide equipment for the key commodities and services.

"The bulk of the equipment required for these purposes will in fact be provided by the participating countries and Western Germany themselves.

"They will themselves produce about 90 pct of their total requirements of mining equipment, which are estimated at $3.7 billion; for the program of generating plant extension—$5.3 billion—the proportion is much the same; they will produce two-thirds of their petroleum equipment requirements, both for the domestic refining programs and for development overseas; apart from certain special items, such as continuous wide strip mills, they will provide most of the plant required for the expansion and modernization of their iron and steel industries; the European tractor and agricultural machinery industries are expanding fast and will suffice to cover the long-term requirements except again for special types of equipment."

Meanwhile, the Harriman committee hopes to determine within the next few weeks the recommendations it will make to Congress regarding certain basic European requirements.

In the case of mining machinery, for example, the committee will consult with technicians and others familiar with the German mining industry. Since U. S. mining machinery is not readily adaptable to German mines, the committee probably will decide to recommend shipment of semi-finished steel and let the German mine operators build their own machinery.

British officials in charge of the administration of the Ruhr will probably again reiterate their preference for rolled steel, rather than semi-finished. The fuel-shipping program internally in Germany is expected to break down again this winter.

The committee sees its immediate task in the drawing up of recommendations in these vital areas: Food, coal and oil, mining equipment, oil refining equipment, transportation equipment, steel, and agricultural machinery.

Present plans are for the committee to have a finished report on President Truman's desk by Nov. 1. The report will be loaded with all the ammunition and persuasiveness it can muster, for the report will be the basis of Mr. Truman's message to Congress on the Marshall Plan.

Secretary Harriman and his planners know that anything short of an air-tight argument for the $22 billion program will fail to win quick Congressional approval.

Advises Apprentice Study

Washington

• • • **The metalworking** industry should follow the example of the construction industry in adopting standards for apprenticeship training, the Labor Dept. recommended last week.

William F. Patterson, director of the department's Apprentice Training Service, told the annual convention of the Metal Polishers, Buffers, Platers and Helpers International Union in Cincinnati that national standards have been helpful to local groups in the construction industry.

Bearing Companies Get Maximum Fines In Antitrust Suit

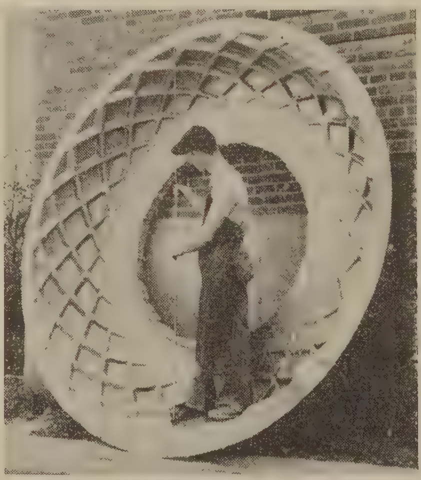
Washington

• • • **Fines aggregating** $40,000, the maximum possible, have been imposed against six ball-bearing companies and two individuals, thus bringing to a close an antitrust suit instigated by the Justice Dept. more than a year ago.

Defendants were General Motors Corp., Detroit; SKF Industries, Inc., Philadelphia; Marlin-Rockwell Corp., Jamestown, N. Y.; Fafnir Bearing Co., New Britain, Conn.; Federal Bearings Co., Inc., Poughkeepsie; and, Norma-Hoffmann Bearings Corp., Stamford, Conn. Each pleaded *nolo contendere* to the charges of conspiracy to fix prices and was fined the maximum $5,000.

Fines were imposed but suspended on Charles F. Stanley of New Britain and Howard Johnson of Jamestown. On the government's motion, an indictment was dismissed against Fred G. Hughes of Bristol, Conn. The case was heard in the Federal District Court in Cleveland and announced Sept. 22.

The Justice Dept. had obtained indictments in March 1946, charging the defendants with conspiring to violate the Sherman Act by fixing prices so as to have the effect of suppressing competition. These six firms, the department said, produced about 95 pct of total American ball-bearing output.



ALUMINUM CASTING: *For molding earthmover tires, the largest Goodyear has ever scheduled for production, this single aluminum casting has been made by the U. S. Gypsum Co. at Yellow Springs, Ohio.*

Adds Machine Tool Advisory Committee To Munitions Board

Washington

• • • **Another industrial** group has been added to the growing list of Army-Navy Munitions Board industrial advisory committees to assist the board in formulating plans and programs relating to industrial mobilization.

Announcement is made by the board that 13 representative manufacturers of the machine tool industry have accepted invitations to serve in this capacity. They will assist in solving numerous problems concerning types of tools required for an emergency, standby and storage problems, and efficient utilization.

Members who have accepted invitations to serve on the machine tool advisory group include: John A. Bradner, president, Lees-Bradner Co., Cleveland; G. R. Burt, chairman of the board, Pratt & Whitney Div., Niles-Bement-Pond Co., West Hartford, Conn.; Eugene C. Clark, Chambersburg Engineering Co., Chambersburg, Pa.; Henry J. Cupper, General Motors, Detroit; C. W. Fuller, General Electric Co., Manufacturing Div., Schenectady; F. V. Geier, president, Cincinnati Milling Machine Co., Cincinnati; Lee Hammond, Hammond Machine Builders, Kalamazoo, Mich.

Also H. A. Ingle, president, Consolidated Machine Tool Co., Rochester, N. Y.; H. E. Lasker, factory superintendent, Republic Aviation Corp., Farmingdale, Long Island, N. Y.; William J. Pearson, Construction Engineering Dept., Bethlehem Steel Co., Bethlehem; J. H. Schreiber, chairman of board, General Engineering & Mfg. Co., St. Louis; C. J. Stilwell, president, Warner & Swasey Co., Cleveland; and J. L. Trecker, Kearney & Trecker Corp., Milwaukee.

Labor Unions File

Washington

• • • **More than 1100 labor** organizations now have filed financial and organizational reports under the Labor Management Relations Act of 1947. Labor Dept. officials said last week they had distributed some 180,000 forms to international and local unions.

More Than 1100 Foreign Visitors See Machine Tool Show

Interest From 35 Countries Gives Big Lift to The Tool Industry

◦ ◦ ◦

By T. E. LLOYD
Machinery Editor

◦ ◦ ◦

Chicago

• • • **The international aspect of** the recent machine tool was one of its outstanding features. About 1100 foreign visitors from 35 countries, excluding Canada, attended the show, giving the exhibits intensive interest.

New machine tool ideas exhibited were novel to them. British machine tools for nearly a decade have been kept at home to fight a war. Since the war England has been exporting machine tools but not at a rate sufficient to fill the needs of its foreign customers. Likewise, American exports have fallen short of demand.

It hasn't been for want of business that the British machine tool industry's exports are low, but lack of labor in the skills required. Lack of steel and lack of power resulting from coal shortages have kept British production far under capacity and pretty much on standard lines.

British producers are quoting deliveries as far ahead as 3 years. Its domestic business, which is strong, is limited by the government to 50 pct of production, and according to William J. Morgan, secretary of the British Machine Tool Trades Assn., who attended the machine tool show, within a short time the government is going to up the export quota to 60 pct of output.

Of these exports, he said, about 30 to 35 pct is going to nations in the British commonwealth. British sales to the Continent have been restricted because of the licensing difficulties and red tape involved in concluding such negotiations. Germany, long the major supplier of machine tools to nations of continental Europe, has no production, and Italian output, limited but increasing, is striving to take the place of what Germany should be producing.

Mr. Morgan pointed out that there was little if any competition in foreign markets today, because machine tools are in such demand that together the exporting nations are only scratching the surface of this market. Furthermore, many nations would like to purchase machines but haven't the purchasing power to do so. These nations will be dormant markets but there is always the possibility of their getting purchasing power and getting into the market actively.

What all of this means to the future of the machine tool industries of America and Great Britain depends upon several factors. Britain will continue to stress exports in order to survive and recuperate from the war. The new Marshall Plan will likely show bankrupt nations a way to get American machine tools through an exchange of commodities, or from the sale of products made on the tools delivered them. In protecting and building up its monetary strength, there is some question that Britain will permit countries in the sterling bloc to buy any except British made tools and if British tools have to be given first priority by Commonwealth nations, this in itself will take a big bite out of the foreign market potential for American builders.

UNDER WRAPS: *Three rubber covers protect precision parts of a new contour wheel dresser from abrasive dust. The dresser is the invention of Nils Hoglund of Union, N. J. The covers, two flexible corrugated tubes for the template slide and piston rod mechanism and a neoprene shield for the bearings directly under the grinding wheel, were developed by U. S. Rubber Co.*

Foremost in machine tool builders' minds is the question of how long it will take to reach the saturation point in foreign markets. The answer to this would solve many problems and permit some real long range planning. Many observers, including Mr. Morgan, believe there will be no real competition for foreign markets in the next 5 years. It will take that long before manufacturers will have to vie for business. Other observers believe that 5 years won't fill the pipelines of the world on machine tools and it will take closer to 7 or 8 years.

Currently, South America is one of the choice machine tool markets. British exports to Latin American nations, like American exports, have been relatively heavy. However, when the point is reached where sales are on a competitive basis, these Latin American countries may very well turn to Europe, as before the war, for the bulk of their machinery requirements. British builders have a substantial edge from the standpoint of price. American builders will have to sell quality, productivity, ease of operation and other such factors, because on price alone they are licked. Furthermore, Great Britain as a nation, is extremely export conscious and will remain so, aiding in every manner possible its exporting manufacturers.

The machine tool show sharply focussed the plus factors held by American builders. Whether American builders become and remain a real factor in foreign markets, however, depends upon their ability to survive in a rough and tumble market of which many know little or nothing about. Furthermore the attitude of the American government towards exports from this country will have a very definite effect upon those exports. The British government, of course, has and will aid wherever possible its exporters.

Construction Steel . . .

New York

• • • The estimated total bookings of fabricated structural steel for August, according to reports received by the American Institute of Steel Construction, Inc., amounted to 142,677 tons, a decrease of 6.5 pct under the bookings of the preceding month, but 26 pct over the bookings of the same averaged month during the 5 prewar years 1936 to 1940. Bookings for the first 8 months of the year amounted to 1,053,376 tons.

August shipments, reported at 143,628 tons, showed an increase of 5 pct over the same month in the 5 prewar years, while shipments for the 8 months were 26 pct greater than for the same months in the prewar period.

The tonnage available for fabrication as of Aug. 31, was 638,953 tons.

• • • **Fabricated steel awards** this week included the following:

8175 **Tons**, Chicago, Midland power station for Commonwealth Edison to Carnegie-Illinois Steel Corp., Pittsburgh.

2400 **Tons**, Wilmington, Del., E. I. du Pont de Nemours, Co., research laboratory, to Bethlehem Fabricators, Inc., Bethlehem.

1450 **Tons**, West Springfield, Mass., power plant for Western Massachusetts Electric Co. to Ingalls Iron Works, Birmingham, Ala., through Stone & Webster Engineering Corp., Boston, engineers.

1400 **Tons**, Milwaukee, fermenting house for Pabst Brewing Co. to Wisconsin fabricator through Stone & Webster Engineering Corp., Boston, engineers.

800 **Tons**, Forest Park, Ill., housing project, American Community Builders to Bethlehem Steel Co., Bethlehem.

500 **Tons**, Hershey, Pa., Hershey Chocolate Co., building, to Bethlehem Steel Co., Bethlehem.

300 **Tons**, Hopewell, Va., boiler plant for Solvay Process Co. to Virginia Bridge Co., through Stone & Webster Engineering Corp., Boston, engineers.

100 **Tons**, Chesterfield, Va., administration building for Virginia Electric Power Co., to Bristol Steel & Iron Co., through Stone & Webster Engineering Corp., Boston, engineers.

50 YEARS AGO

THE IRON AGE, *September 30, 1897*

- "A very good trade is in progress on scrap in Chicago this week. Consumers are now taking hold quite freely. Dealers' selling quotations on heavy melting scrap are $7.75 per gross ton."

- **"Andrew Carnegie will not spend the winter in this country as usual. He has taken a cottage at Aix-les-Bains in Southern France."**

- "One of the banes of our commercial life in the aluminum business has been flying machine cranks, who were very sure that with the aid of the new metal, aluminum, which they maintained was three times as strong, as well as three times as light as steel, they should be able to accomplish that in which Darius Green had failed . . ." Capt. E. A. Hunt, President of the Pittsburgh Reduction Co.

- **"Studebaker Bros. Mfg. Co. at South Bend report that business keeps up at a lively pace. All departments are running full, showing about 2000 men enrolled. The company will control the output of the World Buggy Co., which has been formed to produce a buggy and road wagon to compete with medium price vehicles."**

- "A new steel casting process is reported to have been developed in England in which castings are made in an air-tight chamber from which air is exhausted, the mold or casting being placed in the chamber before exhaustion takes place. A series of surrounding vacuum chambers suck out the air at the moment molten steel is poured into the mold. A flawless, homogeneous casting is produced."

- **"On her maiden trip last week, the large new steamship, Kaiser Wilhelm der Grosse of the North German Lloyd line, broke the record from Southhampton to New York, making the trip in 5 days, 22 hr and 45 min."**

• • • **Fabricated steel inquiries** this week included the following:

1350 **Tons**, Hazleton, Pa., Hazleton Industrial Development Corp., building, bids in.

890 **Tons**, Santa Barbara County, Calif., two bridges across Nojoqui Creek and Santa Ynez River near Buellton, California Div. of Highways, Sacramento, bids in.

450 **Tons**, Crystal Lake, Ill., laboratory for Pure Oil Co., Stone & Webster Engineering Corp., Boston, engineers.

350 **Tons**, Baltimore, Globe Brewing Co., brewhouse, bids in.

310 **Tons**, Philadelphia, General Motors Co., warehouse, bids in.

220 **Tons**, Washington County, Pa., two bridges, Pennsylvania Dept. of Highways, Oct. 3.

175 **Tons**, Harrisburg, Pa., Brenner & Sons Co., warehouse, bids in.

170 **Tons**, Hammond, Ind., lead dross building for American Smelting & Refining Co., New York.

115 **Tons**, Nicetown, Pa., Potts-Farrington Co., building & shed, Jack S. Steel Co., contractor, bids in.

• • • **Reinforcing bar awards** this week included the following:

700 **Tons**, Dorena Dam, Ore., construction of dam, through Guy F. Atkinson Co. to Northwest Steel Rolling Mills, Seattle.

500 **Tons**, Missoula, Mont., St. Patrick's Hospital, to Northwest Steel Rolling Mills, Seattle.

370 **Tons**, Fargo, N. D., Red Owl store, Standard Contracting Co., Minneapolis, previously reported, low bidder received contract, to Ceco Steel Products Co.

350 **Tons**, East Chicago, Ind., City Service plant to the Dean Steel Co.

200 **Tons**, Olympia, Wash., construction of brewery, through Homan Construction to Northwest Steel Rolling Mills, Seattle.

150 **Tons**, Worcester, Mass., sewerage disposal plant to Northern Steel Co., Boston.

100 **Tons**, Lynn Mass., garage for Coca-Cola Co., to Northern Steel Co., Boston.

• • • **Reinforcing bar inquiries** this week included the following:

225 **Tons**, Santa Barbara County, Calif., two bridges across Nojoqui Creek and Santa Ynez River near Buellton, California Div. of Highways, Sacramento, bids to Oct. 1.

125 **Tons**, Champaign, Ill., national resources building for University of Illinois.

• • • **Plate awards** this week included the following:

16000 **Tons**, Paulsboro, N. J., Texas Co., tanks, to Bethlehem Steel Co., Bethlehem.

4000 **Tons**, Paulsboro, N. J., Texas Co., riveted tanks, to Graver Tank & Mfg. Co., East Chicago, Ind.

125 **Tons**, Bethlehem, propane tanks for Allentown-Bethlehem Gas Co., Bethlehem, to Bethlehem Steel Co., Bethlehem.

• • • **Railroad car awards** this week included the following:

The Chicago, Indianapolis & Louisville R.R. has ordered 100 50-ton auto box cars from the Pressed Steel Car Co. of Mt. Vernon, Ohio. The Erie R.R. has ordered 1000 50-ton hoppers and 700 50-ton box cars from the American Car & Foundry Co. The Wheeling & Lake Erie R.R. has ordered from Ralston Steel Car Co. 1000 70-ton hopper cars for delivery in the second and third quarter of 1948. The Lehigh Valley R.R. has ordered 500 50-ton hopper cars from Bethlehem Steel Corp. The Lehigh & New England R.R. has ordered 100 70-ton hoppers from American Car & Foundry Co.

Alloy Steel Production Holds at 9 Pct of Total Output

Present Output Is Higher Than Prewar Period But Below War Days

° ° °

By TOM CAMPBELL
News-Markets Editor

° ° °

New York
• • • **Despite the** apparent balance between alloy steel supply and demand the output of this material still represents a greater per cent of total steel output than in the prewar period. In 1939 about 6 pct of total steel production was alloy steel; in 1946, 9 pct of total output was alloy and during the first 6 months of this year the average was still around 9 pct.

At one time during the war days, because of ammunition and ordnance requirements, production of alloy steel reached as high as 16 pct of total output. It is not expected that the participation of alloy steel production will sink to prewar levels. As the carbon steel market becomes more normal with respect to supply and demand the actual percentage of alloy steel to total steel output may climb to 10 pct or more.

As was expected openhearth operators have made good their threat that they would, after the war, produce about the same percentage of alloy steel compared with total alloy output as they did in the prewar days. Despite the tremendous growth in electric steel capacity openhearth producers have been able to maintain their prewar position.

• • • **1939, 77 pct of** alloy steel output was made by the openhearth process. During the war this percentage dropped to as low as 62 pct of total alloy steel production. In 1945, 68 pct of the alloy steel produced was made in the openhearth but during the first 6 months of 1947 there was strong

Trends in Alloy Steel Production—Openhearth vs. Electric

1939-1947

Source—American Iron & Steel Institute. Compilation—The Iron Age

Net Tons. 000 Omitted

YEAR	ALLOY STEEL OUTPUT				
	Openhearth		Electric		
	Production	Pct of Total	Production	Pct of Total	Total Production
1939	2,462	77	750	23	3,212
1940	3,679	74	1,287	26	4,966
1941	5,743	70	2,463	30	8,206
1942	8,133	71	3,393	29	11,526
1943	9,221	70	3,895	30	13,116
1944	6,974	66	3,553	34	10,527
1945—January	610	67	298	33	908
February	578	67	285	33	863
March	669	67	323	33	992
April	596	65	323	35	919
May	574	64	323	38	897
June	520	66	273	34	793
July	495	68	237	32	732
August	339	68	163	32	502
September	358	72	137	28	495
October	340	70	149	30	489
November	375	73	142	27	517
December	358	72	136	28	494
1945—Total	5,812	68	2,789	32	8,601
1946—January	231	71	95	29	327
February	89	68	41	32	130
March	402	76	128	24	531
April	363	69	165	31	528
May	252	64	141	36	394
June	396	73	148	27	543
July	457	76	146	24	603
August	492	75	168	26	660
September	442	75	144	25	586
October	487	77	146	23	633
November	431	74	153	26	584
December	390	73	143	27	533
1946—Total	4,438*	73	1,618	27	6,056*
1947—January	511	75	167	25	678
February	408	72	156	28	564
March	478	74	165	26	643
April	481	75	164	25	645
May	514	76	163	24	677
June	448	75	148	25	596

*Adjusted

Alloy Steel Production vs. Total Steel Output

1939-1947

Net Tons. 000 Omitted

YEAR	Alloy Steel		Total Steel Production
	Production	Pct of Total Steel	
1939	3,212	6.1	52,799
1940	4,966	6.3	66,983
1941	8,206	9.9	82,839
1942	11,526	13.4	86,032
1943	13,116	14.8	88,873
1944	10,497	11.5	89,642
1945—January	908	12.6	7,206
February	862	12.0	6,655
March	992	12.9	7,708
April	918	12.6	7,292
May	897	12.0	7,477
June	793	11.6	6,842
July	732	10.5	6,937
August	502	9.3	5,736
September	495	8.3	5,983
October	489	8.7	5,598
November	517	8.3	6,201
December	494	8.2	6,051
1945—Total	8,599	10.8	79,736
1946—January	327	8.4	3,872
February	130	9.3	1,393
March	531	8.2	6,507
April	528	9.1	5,806
May	394	9.7	4,072
June	543	9.7	5,625
July	603	9.1	6,610
August	659	9.6	6,887
September	585	9.0	6,518
October	633	9.2	6,910
November	584	9.1	6,410
December	533	9.3	5,760
1946—Total	6,056*	9.1	66,591*
1947—January	677	9.4	7,213
February	564	8.8	6,422
March	643	8.8	7,308
April	645	9.2	7,043
May	677	9.2	7,330
June	596	8.6	6,969

* Adjusted.

Industrial Briefs . . .

• **Expands Bolt Production**—H. M. Harper Co., Chicago, manufacturers of nonferrous screws, bolts and other screw products, will begin construction immediately of the first unit of its new plant. The company several years ago acquired a 40-acre site in Morton Grove just outside of Chicago and the first unit will contain 100,000 sq ft of floor space. The new plant will be located on Oakton St. at the intersection of the Chicago, Milwaukee & St. Paul R. R. in Morton Grove, Ill.

• **Swiss Subsidiary**—Organization of a new subsidiary company in Switzerland has been announced by the Minneapolis-Honeywell Regulator Co. Named Honeywell A. G., the new company will handle sales and service of the complete line of Honeywell controls as well as all of the industrial recording and controlling devices made by the Brown Instrument Co., wholly-owned Honeywell subsidiary.

• **To Construct Laboratory** — Plans for starting immediate construction of a $120,000 laboratory on a newly acquired 35-acre site in Bedford Township, near Cleveland, have been announced by the Pesco Products Div. of Borg-Warner Corp. The laboratory will be used for testing aircraft fuel systems.

• **Community For Sale** — An industrial community within easy access of labor and markets is being offered for sale or lease, in whole or in part, by the WAA. Sealed bids for eight former shell loading lines of the Sangamon Ordnance plant near Illiopolis, Ill., will be accepted by the WAA real property office in Chicago until Oct. 24. Each an entity in itself, the lines are particularly suitable for light manufacturing purposes, and they occupy a total of more than 400 acres of land. Information, standard bid forms, and inspection permits may be obtained from the WAA real property office.

• **Changes Name**—Great Lakes Mfg. Co., Wyandotte, Mich., has changed its name to Great Lakes Mfg. & Foundry Co.

• **Steel on the Block**—WAA will offer for sale at fixed prices 5300 tons of carbon and alloy steel which cost the government almost $1 million. Much of it is primary product in hot and cold-rolled rounds and will have to be re-rolled. In addition to the rounds like billets, hexagons, plates, flats, strip and sheets, together with smaller quantities of seamless and welded tubing and stainless sheets. Items may be inspected at the WAA warehouse in East Chicago, Ind. Orders may be filed at the Customer Service Center, Navy Pier, Chicago, where orders for veterans will be filled on Oct. 10 and orders of commercial buyers on Oct. 20.

• **New Company** — George E. Gregory, vice-president, Owens-Corning Fiberglas Corp., Toledo, will be directing head of Morton-Gregory Co., Inc., a new organization being formed to manufacture and sell new industrial and consumer products using fiberglas yarns and other newly developed materials. The new products were developed by a group headed by Henry J. Morton, consulting electrical engineer of Detroit.

• **For Sale or Lease** — A war surplus steel foundry in East Chicago, Ind. with a capacity of 30,000 tons of heavy steel castings a year is being offered for sale or lease on a competitive bid basis by WAA. The property includes a one story structural steel foundry building with a floor area of 222,000 sq ft, and a two story brick office building with a floor area of 21,000 sq ft. Also included in the sale are three 40-ton openhearth furnaces, 23 machine tools, cranes, and other machinery and equipment. Sealed bids for the entire plant, or for the real property or the machinery, will be accepted by the WAA real property office in Chicago until Oct. 31.

indication that for the year about 75 to 76 pct of alloy steel output will have been made by the openhearth process.

One inducement in the sale of alloy steel by some companies is the insistence that alloy steel must be purchased if the customer expects to receive specified tonnages of carbon steel. As the demand for alloy steel drops off and so long as carbon steel requirements remain above supply "package sales" are expected to increase in number.

Bliss Expands Capacity And Acquires New Plant

Detroit

• • • **Representing their most recent expansion program the E. W. Bliss Co. is increasing the capacity of its Salem, Ohio plant by adding approximately $350,000 worth of modern machine tools to the plant. Several buildings to be rehabilitated will yield 33 pct more floor space for machining and assembly.**

Included in the new equipment is one of the largest planers in the Middle West as well as two giant lathes, according to the company. Skilled technicians of all types are being transferred from the Brooklyn, N. Y. plant, which will be closed on Jan. 1, 1948.

The company's can and container machinery division is being reorganized in order to reduce manufacturing costs and a new manufacturing plant has been acquired at Englewood, N. J. It will be devoted exclusively to can machinery research and development, the design and production of dies and forming parts, and the repair of Bliss machinery located in the vicinity.

Officials in charge of the Englewood operations are N. Cancilla, factory manager; L. R. Hills, can machinery sales manager; and Joseph Klocke, chief die engineer.

Forging Plant Sold

Washington

• • • **Wartime forging facilities,** constructed by the government contiguous to the Lakey Foundry & Machine Co. plant at Muskegon, Mich., have been purchased by the company for $88,952 cash. Original construction cost the government about $284,500 and were appraised by WAA at $95,000.

Weekly Gallup Polls . . .

U. S. Backs Marshall's Call for UN Action on Greece

Princeton, N. J.

• • • Secretary of State Marshall's call for United Nations action on Greece is closely in tune with American public thinking, according to George Gallup, director, American Institute of Public Opinion.

A survey completed by the institute only a few days before Secretary Marshall spoke at the UN Assembly shows that the majority of American voters favor firm action in combatting Russian influence in the Balkans, and that the possibility of Russia developing atom bombs does not change attitudes substantially.

The Secretary disclosed that Washington will ask the UN Assembly to condemn activities in Russian satellite countries in Greece, to demand that these activities cease and to set up a commission to oversee compliance.

Do these demands reflect the tone and spirit of American public sentiment? One answer is provided in the results of the institute's poll. Four alternatives were presented to voters from coast to coast, and each respondent was asked which alternative appealed most to him as the course of action he would like to see taken.

The poll question and the vote on each alternative follow:

"As you know, the United States is now sending military supplies and other aid to Greece to keep her and neighboring countries from coming under Russia's control. If we find within the next few weeks that this help is not enough, which one of these steps do you think we should take?"

	Pct
(1) Let Russia control Greece and any other countries she wants to	4
(2) Let Russia control Greece but plan to stop Russia from getting control of any other countries later on	6
(3) In cooperation with the United Nations organization, send U. S. troops to patrol the Greek border to stop armed men from coming into the country to make trouble	28
(4) In cooperation with the United Nations, tell Russia that any further move into Greece will be considered a declaration of war against the rest of the world	40
Other miscellaneous answers	5
No opinion	17

The first two alternatives, representing comparatively mild, "live-and-let-live" attitudes, total 10 pct, whereas the third and fourth total 68 pct—a ratio of nearly 7 to 1. The weight of opinion, judging by this survey, is heavily on the side of firmness in our policy concerning Greece.

Sentiment for such firmness is especially heavy in the upper education levels. A considerably greater proportion of voters who have had college training vote for alternatives three and four than of voters who have had only grade school or no schooling.

The poll results by degrees of education follow:

	College Pct	High School Pct	Grade or No School Pct
Alternative 1	3	3	5
Alt. 2	3	6	7
Alt. 3	32	31	26
Alt. 4	44	42	37
Misc.	11	4	4
No opin.	7	14	21

An interesting sidelight of the survey is that the people interviewed indicate that they would not greatly change their fundamental attitude if Russia were to have atomic bombs within the next year.

In order to determine what effect such a possibility would have on opinion concerning Greece, the institute asked the same voters, in a second question, what they favored doing if Russia does develop atomic bombs of her own.

The question was:

"Some experts say that Russia will have atomic bombs in about a year. If she does, our advantage of being the only country that makes atomic bombs would end 1 year from now. In view of this, which of the four steps do you think we should take now concerning the present situation in Greece?"

	Pct
Alternative 1	3
Alternative 2	4
Alternative 3	24
Alternative 4	46
Misc.	4
No opinion	19

•

Blame for High Prices Not Concentrated on Any Group; Offer Remedies for Lower Costs

° ° °

• • • **A Senate committee** began a series of hearings embracing 12 cities in an attempt to diagnose the cause of the current soaring living costs.

If the committee visited every city in the nation and asked all citizens to name the group or groups responsible for skyrocketing food and other prices, they would not find the public's ire focused on any one scapegoat.

What this means is that, while there is a lot of talk and great exasperation about prices, it is going to be very difficult to make political capital out of the high cost of living.

If it were true that a major proportion of the public blamed any single factor or group of the population for high prices, a politician could no doubt dig pay dirt out of the issue. But at this stage certainly no evidence exists of any such unanimity of opinion among voters.

The institute has polled a nationwide cross-section of voters on this question:

"Do you blame anyone for present high prices?"

	Pct
Yes	50
No	36
No opinion	14

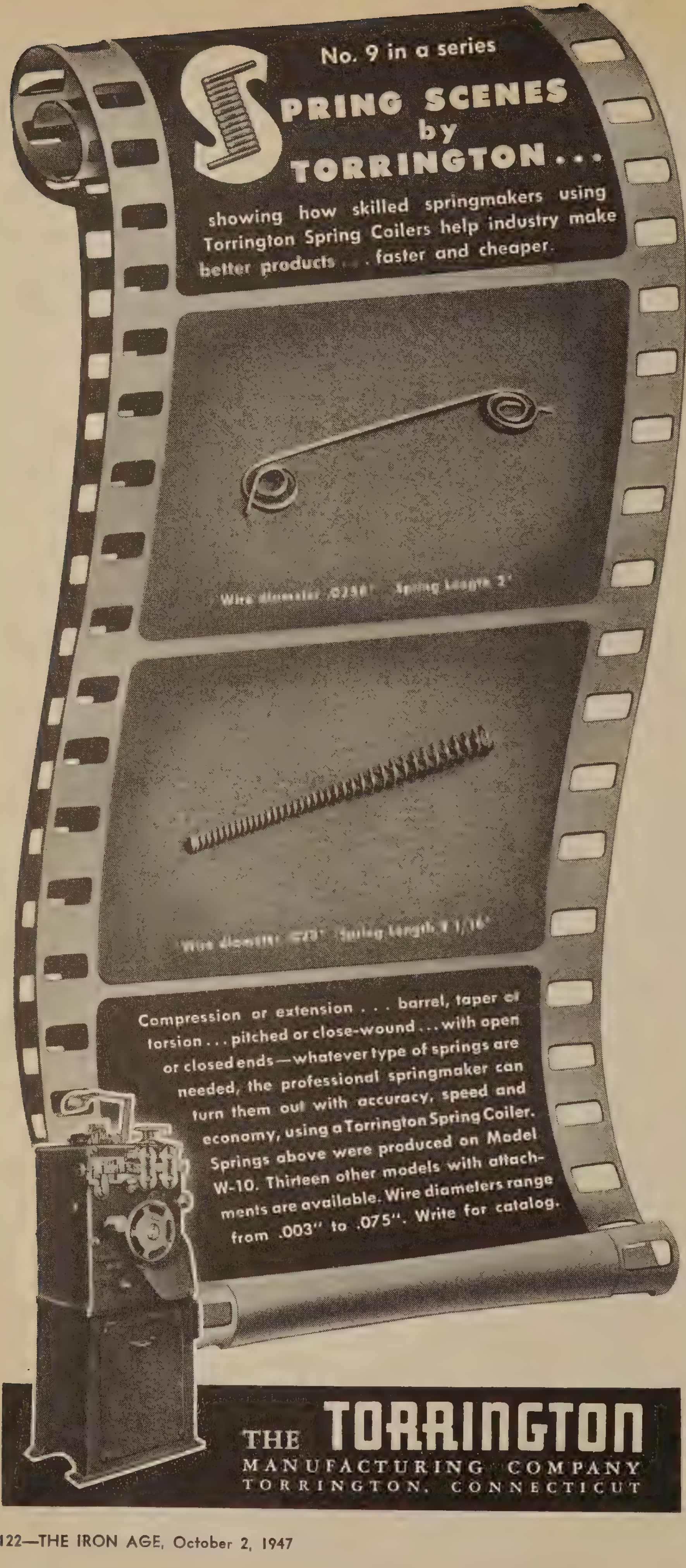
The voters who said they did hold someone responsible were then asked whom they blamed. Their replies:

	Pct
Government	17
Business and industry	14
Labor	9
Everyone	7
Republicans	2
Farmers	1
Miscellaneous	4
	54

(Adds to more than 50 pct because some gave more than one answer.)

Thus, the largest single bloc of opinion in the country (36 pct) holds no one responsible. The next largest group places the

(CONTINUED ON PAGE 139)


Wire diameter .0258" Spring Length 2"
Wire diameter .025" Spring Length 3 1/16"

No. 9 in a series

SPRING SCENES by TORRINGTON...

showing how skilled springmakers using Torrington Spring Coilers help industry make better products . . . faster and cheaper.

Compression or extension . . . barrel, taper or torsion . . . pitched or close-wound . . . with open or closed ends—whatever type of springs are needed, the professional springmaker can turn them out with accuracy, speed and economy, using a Torrington Spring Coiler. Springs above were produced on Model W-10. Thirteen other models with attachments are available. Wire diameters range from .003" to .075". Write for catalog.

THE TORRINGTON
MANUFACTURING COMPANY
TORRINGTON, CONNECTICUT

Egyptian-American Mill In Assuan to Operate Without Coke

New York

• • • A steel mill to produce merchant bar and structural shapes is to be constructed in Egypt with H. A. Brassert & Co. handling the technical details, according to an announcement by that company.

According to Mr. Leo Setton, who is described as "Cairo industrialist and a leading member of an Egyptian financial syndicate interested in the project," commitments have been made by a "well known American financial group" to assure the construction.

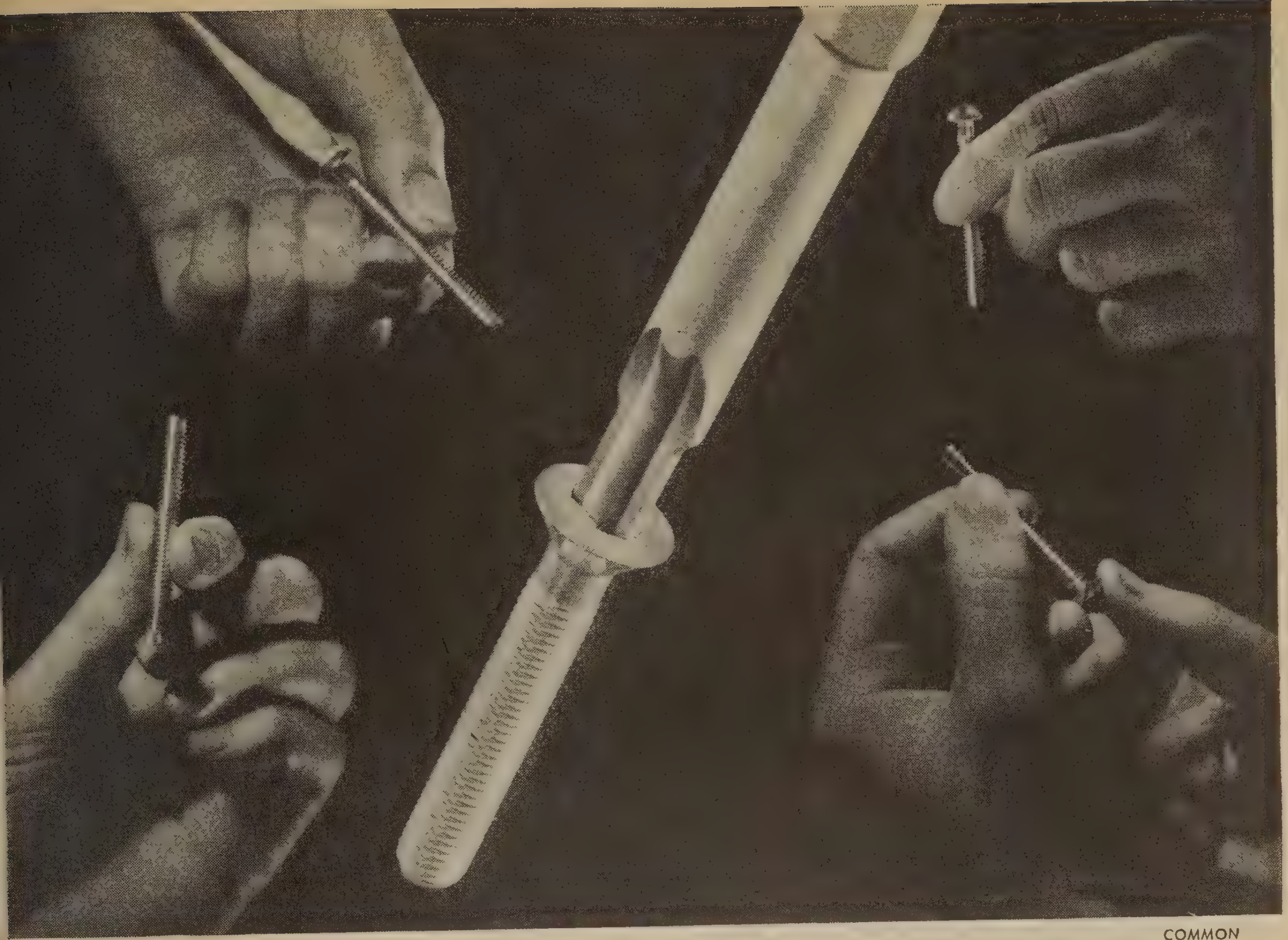
The capitalization of the project in its initial stages will be $80 million, of which $60 million is to be raised in the United States. Mr. Setton announced that in its first stages the output is to be 600 tons per day.

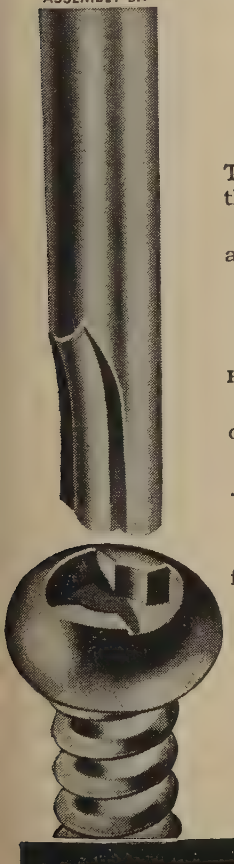
A new Brassert technique which eliminates the use of coal in favor of oil will be used in converting the iron ore of the Assuan province, in southern Egypt. Electrical power for the project is to be drawn from the Assuan dam, and water transport on the Nile will be used to export steel to other Mediterranean markets.

The use of the new process and low transport charges will, in the opinion of the promoter, keep production costs competitive with imports from any part of the world. The ultimate aim of the new company, he said, is to supply the market in Syria, Lebanon, Palestine, Turkey, Greece, and Bulgaria, which has been largely vacated by prewar European suppliers. This market is variously estimated at from 300,000 to 500,000 tons. The Egyptian production will be something over 200,000 tons in the first stage. Egyptian steel imports during 1936 totaled 196,000 tons.

This mill will be the second Brassert project in the eastern Mediterranean area. The Turkish state steel mill at Karabuk was also built under the Brassert aegis.

Some concern has been in New York financial circles due to the Egyptian law requiring that native interests must control all enterprises within that country. There has been a constant growth





THE CLUTCH HEAD "LOCK-ON"

Ousts Fumbling Fingers

Substitutes Seconds For Minutes

This CLUTCH HEAD Lock-On cancels out the slow-down of haphazard groping . . . on the assembly line and in field service.

A reverse turn by hand of the Type "A" Bit in the Clutch recess unites screw and bit as a unit, forming a definite frictional lock.

Thus, the screw is carried direct to the target for drive home at any angle.

While the Lock-On is positive, normal turning of the screw releases it.

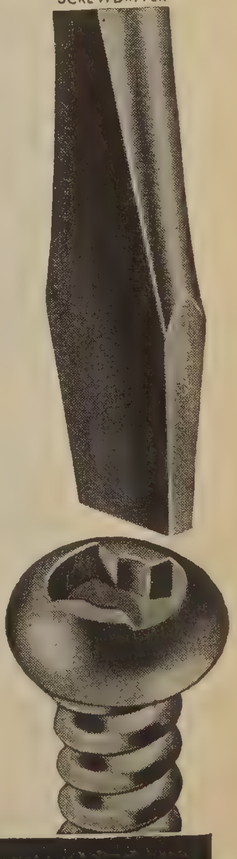
With a Type "A" Hand Driver, service men find it easy to withdraw and save CLUTCH HEAD Screws for re-use . . . *undamaged* and held securely against dropping.

The reverse turning action forms the Lock-On and the screw comes out on the end of the driver.

As opposed to this, consider that a screw dropped in moving parts must be recovered . . . *or else.*

Also that a lost screw may result in an expensive "stall" in operating time.

The Lock-On short-cuts adjustments with a direct reach through the bottlenecks that frequently saves disassembling surrounding units.

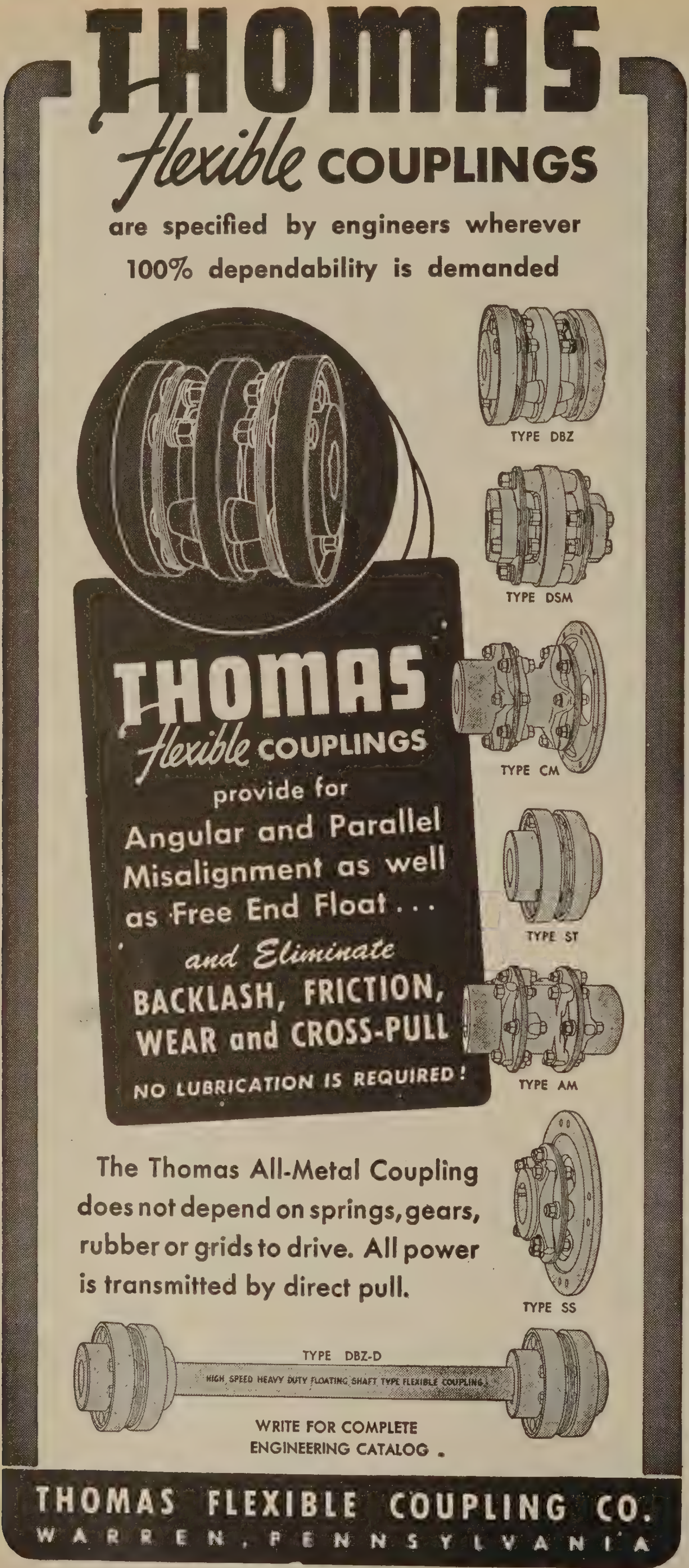


This Lock-On, available *only* with CLUTCH HEAD, is just one of seven major reasons why you should investigate the safety, speed, and lower cost advantages of America's most modern screw. You may do so by sending for package assortment of screws, sample Type "A" Bit, and Brochure.

CLUTCH HEAD SCREWS

UNITED SCREW AND BOLT CORPORATION

CLEVELAND 2 CHICAGO 8 NEW YORK 7



THOMAS *flexible* COUPLINGS are specified by engineers wherever 100% dependability is demanded

THOMAS *flexible* COUPLINGS provide for Angular and Parallel Misalignment as well as Free End Float . . . *and Eliminate* BACKLASH, FRICTION, WEAR and CROSS-PULL

NO LUBRICATION IS REQUIRED!

The Thomas All-Metal Coupling does not depend on springs, gears, rubber or grids to drive. All power is transmitted by direct pull.

WRITE FOR COMPLETE ENGINEERING CATALOG.

THOMAS FLEXIBLE COUPLING CO.
WARREN, PENNSYLVANIA

of a fanatic nationalism in Egypt within recent years, greatly increased during the war in the last two years. The presence of American forces in Egypt during the war has helped to make this a strongly anti-American feeling, as well as the usual anti-British manifestations.

Despite this feeling, Mr. Setton reported that he has received assurances from "high Egyptian officials" that the statute may be relaxed by a special decree of the Council of Ministers. The project, he said, has the unreserved sanction of his government.

C-I Will Try Oxygen, New Angles in First All-Basic Openhearth

Pittsburgh

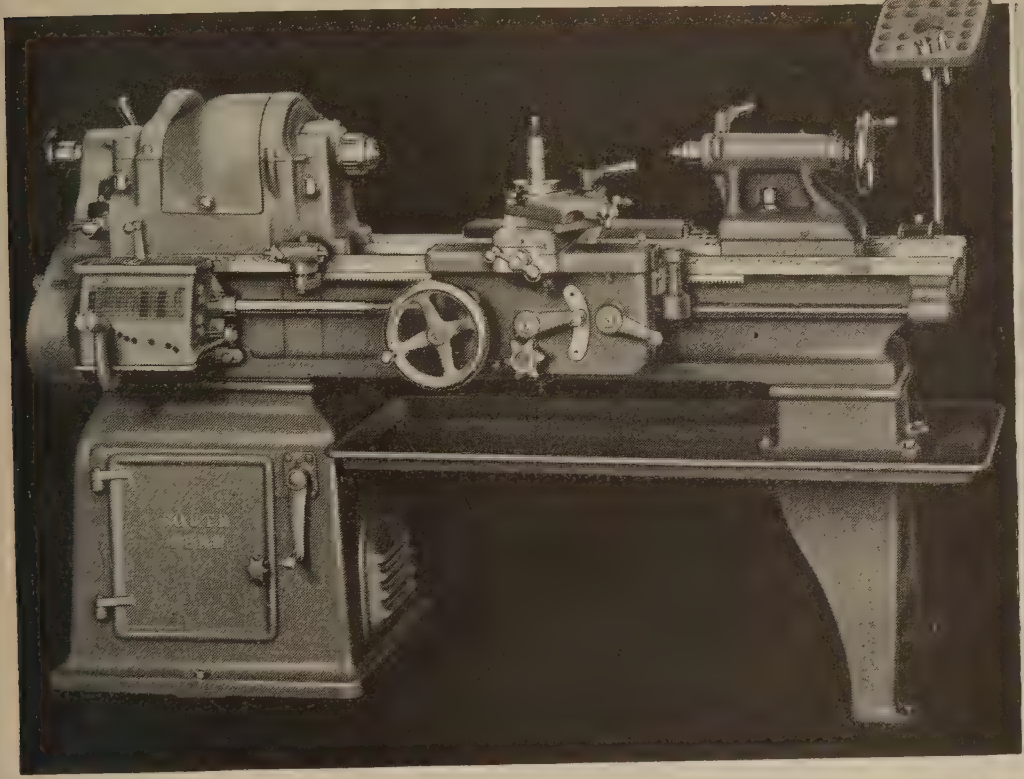
• • • **A 122-ton furnace** at South Chicago, Ill., soon will be trying out the fastest known methods to make openhearth steel for American consumers. So that it may weather the unusually high temperatures associated with experimental speed-up processes, numerous innovations in refractory brick have been employed.

The furnace will be operated under commercial conditions by Carnegie-Illinois Steel Corp. to determine the advantages of various grades of furnace lining brick when combustion is hastened by the application of oxygen and other means.

One of the first "all-basic" openhearth installations in the United States, the South Chicago furnace has been built of basic brick—as opposed to the silica or acid brick in general use. Experiments will include the use of oxygen in various kinds of burners, as well as the use of preheated compressed air for the atomization of oil. Studies also will be made of flame radiation, the effects on furnace efficiency of the higher temperatures permitted by basic lining brick, and to resolve a host of other technical questions concerning steelmaking innovations which have assumed definite shape since the war ended.

An openhearth furnace normally has a "campaign" life of 250 to 500 steelmaking "heats" before it is taken off for major repairs. These repairs are necessary mainly because the brick-

SOUTH BEND 16" PRECISION LATHES



16" x 6' South Bend Precision Toolroom Lathe **$1958.00**

PROMPT DELIVERY

Immediate delivery of some models from distributors' stocks. Others available for early factory delivery.

PRICES

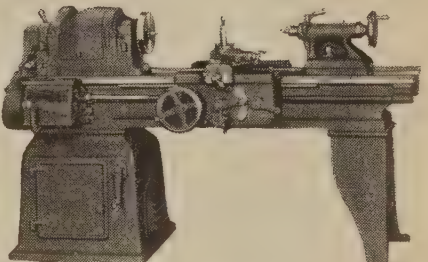
South Bend Lathes now represent a greater value per dollar of cost than ever before. The average price increase over prewar level is less than 15%.

TIME PAYMENTS

South Bend Lathes and accessories are available on Time Payment Terms. 25% down—12 mo. to pay. Moderate finance charge.

The accuracy and versatility of South Bend 16-inch Swing Lathes improve the quality of toolroom work, facilitate tooling, and save machining time. Toolmakers like them. These same features — plus their large capacity, ease of operation, and dependability— step up production work. All these advantages make possible the manufacture of better products at lower costs.

In addition to the lathes shown, South Bend Engine Lathes and Toolroom Lathes are available with 9", 10", 13", and 14½" swings. Also Precision Turret Lathes with ½" and 1" maximum collet capacities. Write for catalog, stating the size lathe in which you are interested.



16" x 6' South Bend Precision Engine Lathe **$1567.00**

16" x 12' South Bend Precision Engine Lathe **$1863.00**

Prices are f. o. b. South Bend, do not include electrical equipment, and are subject to change without notice.

Features and Specifications of 16" Precision Lathes

Toolmakers like them

SWING OVER BED AND SADDLE WINGS	16¼"	THREAD CUTTING (48 pitches)	4 to 224 per inch
SWING OVER SADDLE CROSS SLIDE	9⅝"	MAXIMUM COLLET CAPACITY	1"
BED LENGTHS	6, 7, 8, 10, and 12 feet	SPINDLE BORE	1⅜"
DISTANCE BETWEEN CENTERS	33½" to 105½"	CROSS SLIDE TRAVEL	10½"
SPINDLE SPEEDS (8)	21 to 725 r. p. m.	COMPOUND REST TOP SLIDE ANGULAR FEED	3¾"
POWER LONGITUDINAL FEEDS (48)	.0015" to .0841"	TAILSTOCK SPINDLE FEED	5¾"
POWER CROSS FEEDS (48)	.0006" to .0312"	TAILSTOCK TOP SET-OVER	1"

BUILDING BETTER LATHES SINCE 1906

SOUTH BEND LATHE WORKS

421 EAST MADISON STREET • SOUTH BEND 22, INDIANA

Now Swing Grinding Time Cut 25%

. . . with DINGS Hold-Tite MAGNET!

Here's a new time and labor-saving device which already has been applied widely in leading foundries for holding castings during swing grinding. Where castings are too heavy for hand grinding but must be locked in position for swing grinding, this magnet is the answer. Set the casting on the magnet, grind it, turn off the power to the magnet and remove the casting. Holds castings of any shape absolutely secure, eliminates wedging, blocking or clamping, saves time, speeds up the work.

Completely flexible, holds all shapes of castings, nothing to get out of order. Time studies at a large steel foundry prove 25% labor saving. MADE IN TWO SIZES: magnet face 16″ x 29½″ or 16″ x 16″. With or without tilting trunnions. Operates on 115 or 230 volts D.C. Available with hand or foot switch.

For lower grinding costs send today for full details on this new Dings HOLD-TITE Magnet.

Check these features

- Simple foot lever permits easy tilting to seven positions.
- Low operating cost—only 400 watts for small size — 600 watts for large size.
- Wound for continuous duty with glass insulated wire.
- Renewable wearing plates.
- Highest quality electro-magnetic design and construction.

Built by

DINGS MAGNETIC
SEPARATOR COMPANY
4709 West McGeogh Avenue
Milwaukee 14, Wisconsin

Dings MAGNETIC SEPARATION HIGH INTENSITY

World's Largest Exclusive Builder of Magnetic Equipment

work has burned out or failed in some spot. Since replacement constitutes the major portion of furnace maintenance cost, which runs normally from $1 to $2 a ton, the proper composition of brickwork plays an important part in the over-all economy in openhearth operation. In plans for the new furnace, care was taken to overcome service deficiencies anticipated in those furnace parts most affected by the more intense temperatures to be encountered.

While the building of an all-basic openhearth is distinctly new, a gradual increase in the use of basic brick in the furnace lining has been going on for years. The principal incentives for building a basic roof, as listed in a paper, "The Outlook for an All Basic Open Hearth Furnace," by R. B. Sosman, who recently retired as assistant director of research, U. S. Steel Corp. of Delaware, are as follows: (1) Increased melting speed, (2) longer furnace life, (3) less silica in the slag floating on top of the molten steel, which means a smaller volume of refining slag, and (4) easier clean-out of slag pockets. The principal disadvantages were listed by Dr. Sosman as: (1) Higher cost of basic brick, and (2) additional weight.

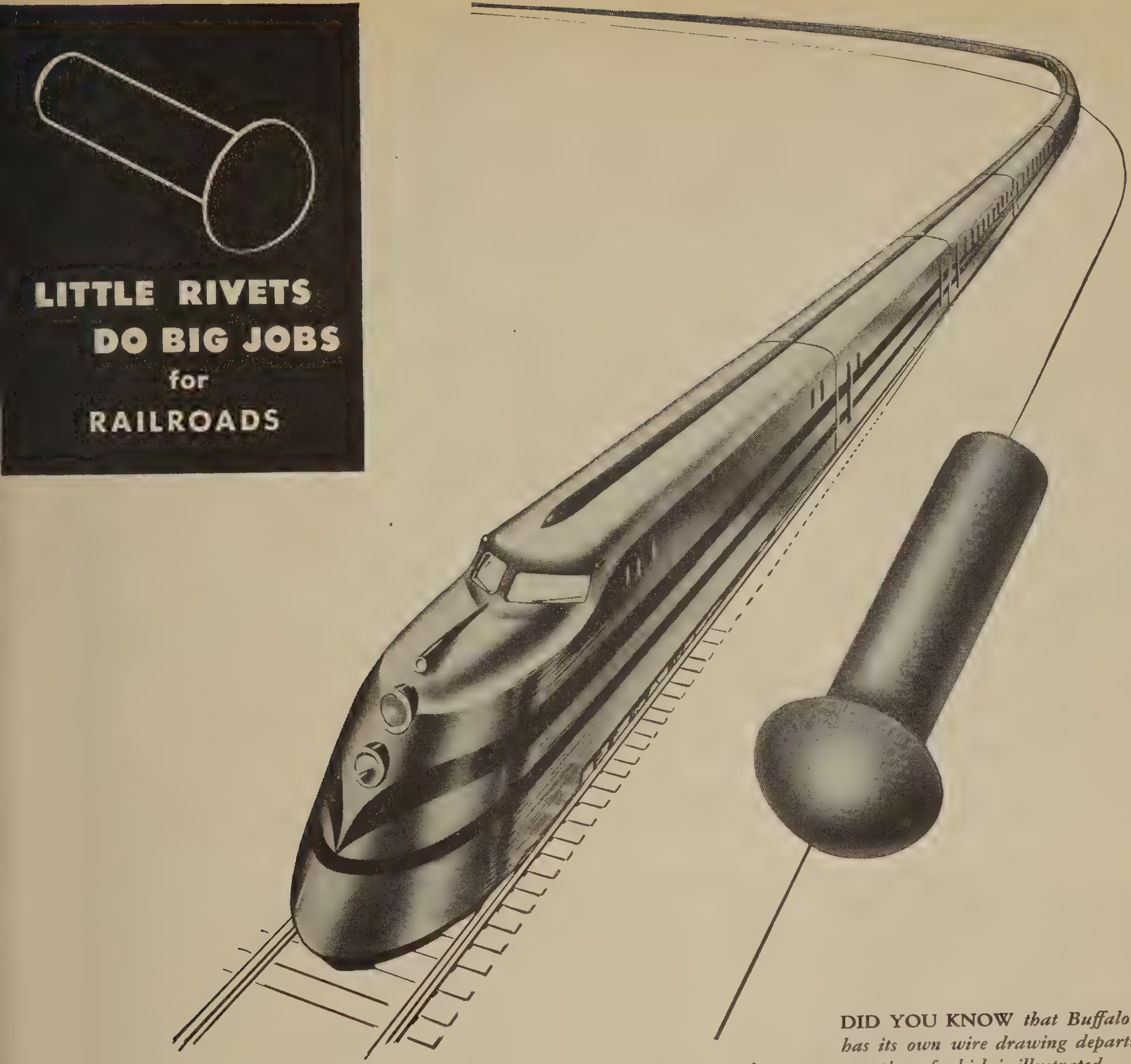
In the construction of the South Chicago furnace, five grades of basic brick, made in various combinations of chrome and magnesite were used.

Raw materials of widely different origins are brought together to produce the improved basic refractories now in use. The grain magnesite requirements are largely met by domestic sources, which may be either the natural carbonate mineral or from sea water and well brines. Refractory grades of chrome ores, on the other hand, are imported from all over the world, but principally from Cuba, the Philippines and Africa.

Ayres Gets New FTC Term

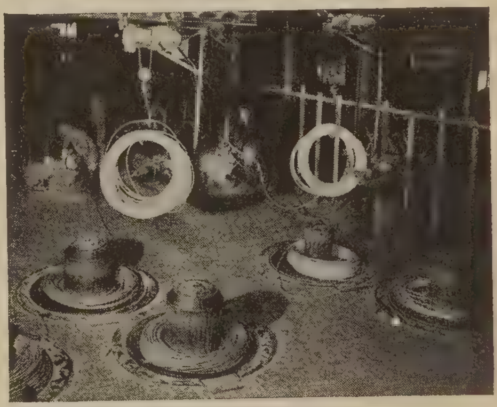
Washington

• • • **William A. Ayres,** of Kansas, has been sworn in for a third term as a member of the Federal Trade Commission. The new term, for 7 years, begins September 26. He was first appointed to the FTC by President Roosevelt in 1934 to succeed James M. Landis.



LITTLE RIVETS DO BIG JOBS for RAILROADS

DID YOU KNOW *that Buffalo Bolt has its own wire drawing department, a section of which is illustrated.*



● The latest streamlined designs for rail equipment call for lighter, stronger parts and materials. These demands are met, insofar as fasteners are concerned, by Circle Ⓑ Products such as the Button Head Rivet illustrated which is specified by leading rail equipment builders.

Fasteners bearing the Circle Ⓑ trademark not only meet rigid specifications on strength-weight basis, but are noted for their uniform size and long dependable service. These characteristics make it worthwhile to specify Circle Ⓑ Products when selecting fasteners for your products.

BUFFALO BOLT COMPANY

NORTH TONAWANDA, N. Y. • SALES OFFICES IN PRINCIPAL CITIES

Export Sales Office: Buffalo International Corp., 50 Church Street, New York City

If you have a SPECIAL PROBLEM

in any of these operations, where precision work is demanded and where greater production at man-hour savings is paramount—

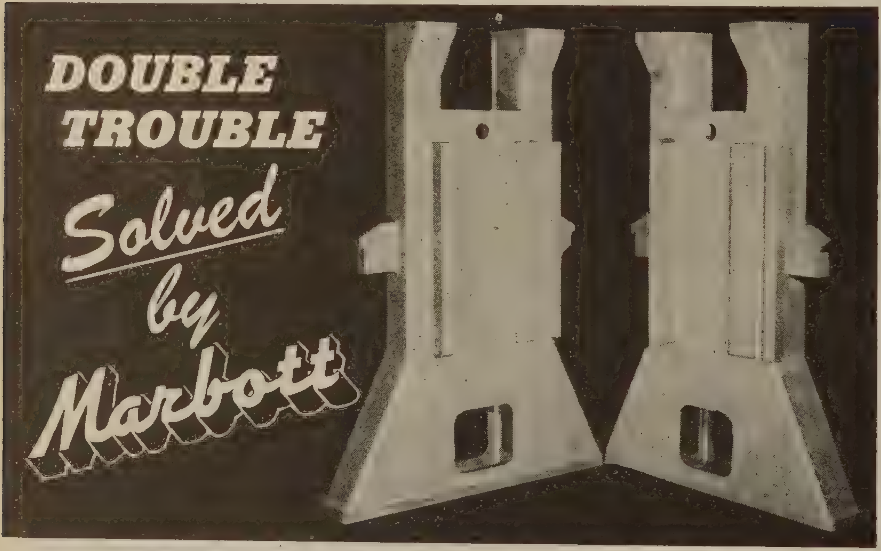
• BORING—rough, semi-finish and finish • MILLING (special types) • STRAIGHT LINE DRILLING • UNIVERSAL ADJUSTABLE SPINDLE DRILLING • HONING • TAPPING • REAMING • COUNTERBORING • VERTICAL AND WAY-TYPE EQUIPMENT . . .

then a Moline Multiple Spindle Specially Designed machine tool is your answer. Moline tools are ruggedly built and engineered to fit your PARTICULAR requirements, they're made to last for years, they're easy to change over to other jobs, they do better work at less cost and stand up to it longer.

For YOUR special problem, go "HOLE-HOG," write us for any information you may need.

MOLINE
MOLINE TOOL CO. HOLE-HOG MOLINE, ILLINOIS

MOLINE TOOL COMPANY
100 20th Street Moline, Illinois



These mechanical press uprights, designed to support and guide a heavy press-ram under tremendous pressure, presented a twofold problem in fabrication; great structural strength plus precision accuracy were required for the job they were to do. Yet modern Marbott welding methods solved the problem with greater speed, economy and satisfaction than could have been done by any other process. Call Marbott to handle your tough fabrication problems today.

THE Marbott WELD COMPANY
MARBOTT FOR SPEED
4389 Martin Ave. • Cleveland, Ohio • DI-6611

Parts Production For New Hudson Model To Commence in Few Weeks

Detroit

• • • **Production of parts** for the New Hudson postwar car is already underway and full scale assembling of the new model is expected to begin in a few weeks, according to an announcement by A. E. Barit, president and general manager of the company.

Assembly operations on the present model were discontinued last week as Hudson carried forward its preparations to mass-produce the new car. Hudson officials indicated that the conversion job is half completed despite the fact that the factory changes will be more extensive than any previous changeover in the company's history.

Production of the new model has made it necessary to scrap many established assembly line techniques, according to Hudson engineers. Despite the extensiveness of the conversion, the company is expected to be out of production only a few weeks. Meanwhile many workers will be needed to carry on the remaining factory revisions that will be required.

Although full details of the new car have not been released, it has been indicated that the following improvements will be incorporated in the new car:

The new model Hudson will be only 5 ft from the ground to its top and is said by company officials to have a lower center of gravity than any other American automobile being produced today. Because of a radically new frame construction, the passenger steps down into the lowered floor of the car, Hudson engineers explained.

The new Hudson is reported to have more headroom than any other mass-produced car despite its low overall height. An unusually wide rear seat is made possible by the new design. The body will be 75 in. wide at the rear wheels, yet its rear seat, which is located ahead of the rear wheels, is 63 in. wide.

It is claimed that the new Super-Six engine will have more hp than any other six cylinder car on the market today. An improved

TO SOLVE
Your
METAL WORKING PROBLEM

BRANDT
Specialized
METAL WORKING FACILITIES

are utilized by Many Industries
FOR MASS PRODUCTION OF

Stampings
FORMING

Heavy Weldments
ARC AND SPOT WELDING

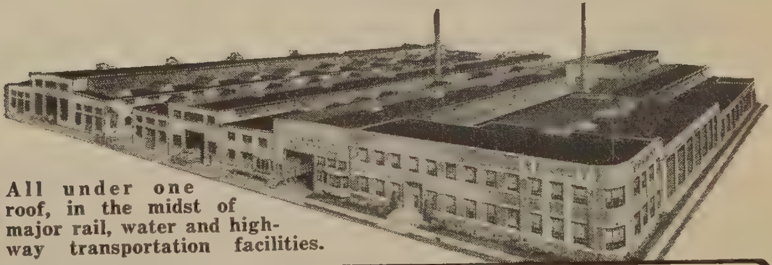
Complete Assemblies
PLATE FABRICATION

•

MILD STEEL
STAINLESS STEEL
ARMOR PLATE
ALUMINUM
SHEET METAL
MAGNESIUM
NON-FERROUS METALS

Call

BRANDT
BALTIMORE



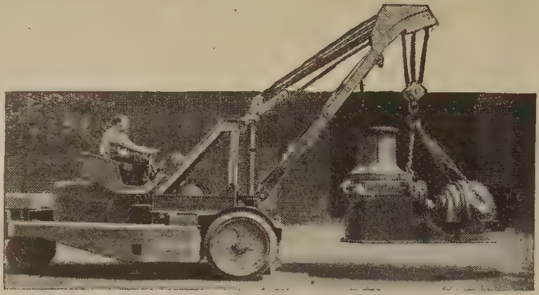
All under one roof, in the midst of major rail, water and highway transportation facilities.

CHARLES T. BRANDT, INC., 1700 RIDGELY ST., BALTO. 30, MD.
57 Years of Specialized Precision Metal Working Experience

KRANE KAR SPARES MEN, SPEEDS WORK

Minneapolis-Moline Power Implement Company reports as follows:

KRANE KAR saves a great deal of time and labor in unloading box cars. This method has cut our labor costs on the average of about 75%. KRANE KAR is a time saver in removing and replacing machine heads for special machine tools, and cumbersome motors and dies for our forging hammers. Also in loading heavy and bulky material into freight cars, enabling us to get shipments out on time. KRANE KAR proves itself invaluable for piling transmission cases, crank cases, and heavy wheel centers, etc. in close quarters. It has practically eliminated the hazard of serious injury in doing this type of work by hand.



9 to 37 ft. booms or adjustable telescopic booms; pneumatic or solid rubber tires; gas or Diesel. 1¼, 2½, 5, and 10 ton capacities.

Write for illustrated Bulletin No. 69.

Case studies in various industries reveal **KRANE KAR** handles materials at cost of about 8¢ per ton. **KRANE KAR** lifts, carries, swings, and places loads indoors and outdoors. Has many exclusive features that promote easy handling, speed, safety, economy.

USERS: Bethlehem, Birdsboro Steel, Boeing, Carnegie-Illinois, Chrysler, Coeur d'Alene, U.S. Steel, etc.

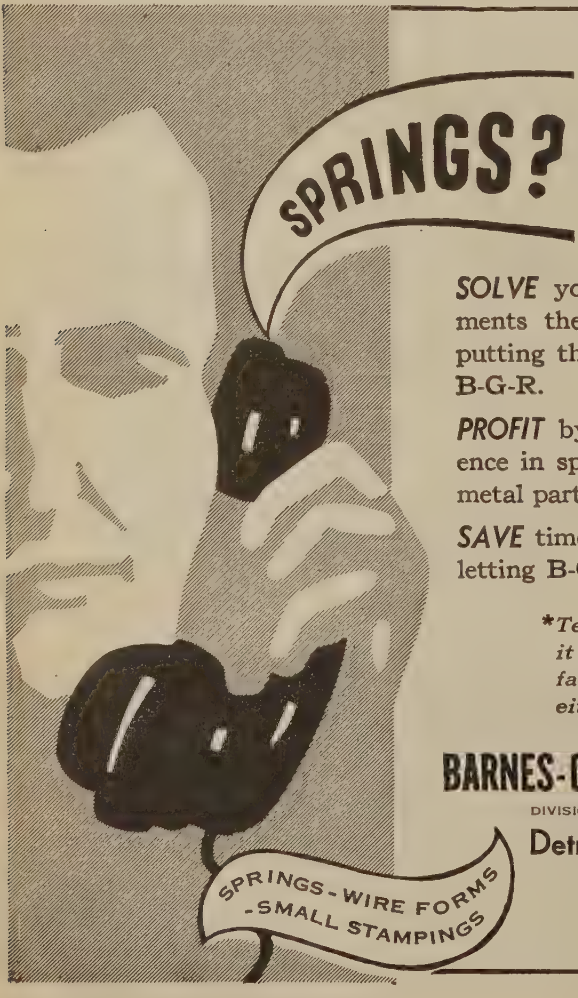
THE ORIGINAL SWING BOOM MOBILE CRANE WITH FRONT-WHEEL DRIVE AND REAR-WHEEL STEER

2½, 5, AND 10 TON CAPACITIES

KRANE KAR

TRADE MARK REGISTERED

SILENT HOIST & CRANE CO., 851 63rd ST., B'KLYN 20, N.Y.


SPRINGS?
SPRINGS - WIRE FORMS - SMALL STAMPINGS

*Tel. it To B-G-R

SOLVE your spring requirements the simple way—by putting them squarely up to B-G-R.

PROFIT by long-time experience in springs and intricate metal parts.

SAVE time and trouble by letting B-G-R recommend.

**Tel. it to B-G-R—or tell it by letter or face-to-face. It's satisfaction either way.*

BARNES-GIBSON-RAYMOND

DIVISION OF ASSOCIATED SPRING CORP.

Detroit · Ann Arbor
MICHIGAN

Super-Eight engine will also be available.

Hudson estimates that tooling for the new job will cost the company $16 million.

According to A. E. Barit, president of Hudson, initial orders for machine tools and dies were placed as early as V-J Day. Installation of new presses began a year ago. Beginning shortly after Labor Day, the first cylinder blocks for new motors were machined at the start of the line while blocks for the present model were being finished at the end of the line.

The company began readying an assembly line for its new car operations more than two weeks ago. Some departments making engine and body components are operating at present on a two-shift basis, it was announced. These operations include stamping of most new body and sheet metal parts.

Although engineering details of the new frame construction are not available, most sources here believe the new Hudson frame construction will have some points of similarity to the unit-type, so-called frameless body construction used by Nash. Box-type steel members will replace the present U-members of the frame. A Hudson official estimated that more steel will be required per car for the new model than is used in the present Hudson.

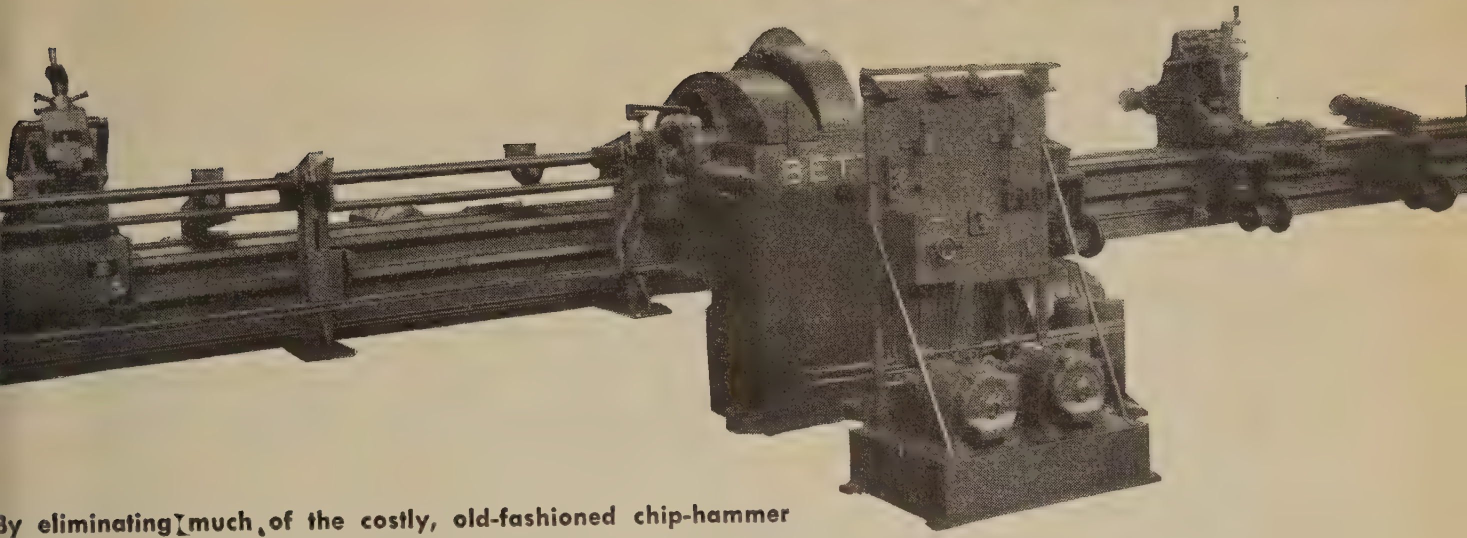
Because of the low center of gravity and the fact that the passengers in the rear of the car will actually ride ahead of the rear wheels, Hudson engineers predict the new model will be outstanding from the standpoint of roadability, ruggedness, riding comfort and safety.

French-Swiss Agreement

Paris

• • • According to the new trade agreement between France and Switzerland, French exports of iron and steel products will be increased from 18,000 metric tons to 97,500 metric tons. France will export, also, 26,700 tons of coal and additional coal tonnage will be delivered against timber for mines and in payment of a private loan granted by Swiss banks in dollars for the purchase of American equipment for mines.

Remove bar seams faster . . . at less cost



By eliminating much of the costly, old-fashioned chip-hammer method of seam removal, the Betts Bar Peeling Machine speeds up production and lowers bar peeling cost. The bar is fed into the cutter head, a light peeling cut taken, and the peeled bar ejected, at cost-saving speed. As most seams or imperfections are on the surface, this light cut removes most of them, and exposes the few remaining for chipping. The economy possibilities of this machine are well worth your investigation.

BETTS BAR PEELING MACHINE

Complete information will be furnished upon request

Among Heavy Machine Tools built by Consolidated are . . . .

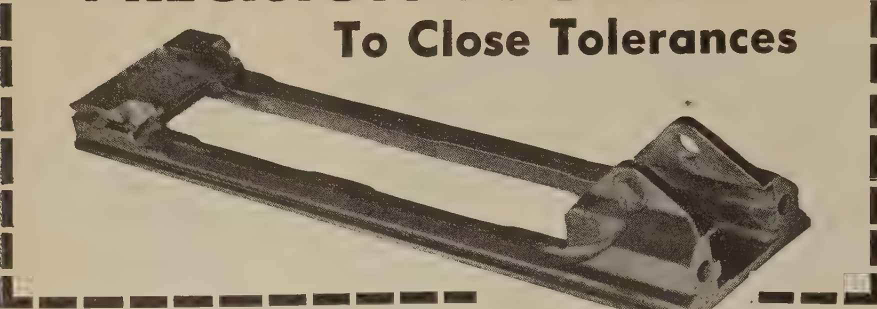
LATHES
BORING MILLS
DRILL PRESSES
MILLING MACHINES
BORING MACHINES
COLD SAW MACHINES
BORING, DRILLING AND MILLING MACHINES
DRILL AND TOOL GRINDERS
PLANERS
SLOTTERS
RAILROAD SHOP TOOLS
AUTOMOTIVE TOOLS
AND OTHER SPECIAL MACHINES

BUILDERS OF HEAVY DUTY MACHINE TOOLS SINCE 184

BETTS • BETTS-BRIDGEFORD • COLBURN • HILLES & JONES • MODERN • NEWTON • SELLER

CONSOLIDATED
MACHINE TOOL CORPORATION
ROCHESTER 10, NEW YORK

PRECISION PRODUCTS
To Close Tolerances



As a result of its wartime activities in manufacturing gunparts, which brought the Army-Navy Award with three stars, the Hendrick plant now has surplus facilities available for making small to medium size precision products to close tolerances. In fact, it is a common procedure for Hendrick's experienced machine tool operators to work to a tolerance of .0005 inches.

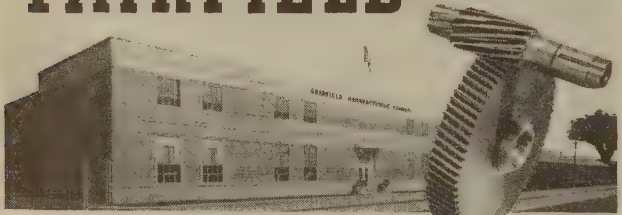
If you will submit specifications and samples of products on which you wish quantity prices, we will quote promptly.

SEE OUR CATALOG IN SWEET'S

HENDRICK
Manufacturing Company
37 DUNDAFF STREET, CARBONDALE, PENNA.
Sales Offices In Principal Cities

Perforated Metals
Perforated Metal Screens
Architectural Grilles
Mitco Open Steel Flooring,
"Shur-Site" Treads and
Armorgrids

FAIRFIELD



where Fine Gears are produced
EFFICIENTLY, ECONOMICALLY!

If you use gears in the product you make, we believe it will pay you, as it has many others, to become acquainted with FAIRFIELD—the place where fine gears are produced to meet your specifications EFFICIENTLY, ECONOMICALLY! Fairfield's production facilities are unexcelled for making all kinds of high precision, automotive type gears such as are now finding wide application in all branches of industry: for machine tools . . . for agricultural implements . . . for construction machinery . . . for printing presses. No matter how special your requirements may be, Fairfield has the equipment and the "know how" to meet virtually any need. Ask for a copy of interesting, illustrated descriptive brochure.

FAIRFIELD
MANUFACTURING
COMPANY
305 S. Earl Ave.,
Lafayette, Indiana

For FINE GEARS

Ford Leases Naval Arsenal to Expand Accessory Section

Detroit

• • • **Ford Motor Co.** expects to add 3300 hourly-rated workers to its payrolls to operate the newly leased naval arsenal at Mound and Mine Mile Road, Detroit.

It is expected that about 4000 persons will eventually be employed. Some supervisory employees will come from the Rouge plant, but the majority will be new employees, according to a Ford announcement.

According to E. R. Breech, executive vice-president leasing of the arsenal is part of a long range Ford expansion program.

The former naval arsenal which was operated during the war by Hudson and Westinghouse comprises 42 acres with 15 buildings. The buildings will provide for Ford parts and accessory section of the sales division. A completely independent manufacturing unit will be established at the arsenal, according to D. S. Harder, Ford vice-president and director of manufacturing.

Work has already been started removing more than $91 million worth of government-owned equipment from the buildings. It will be necessary to install more than 1000 machines after the various buildings are cleared.

WAA Transfers 24 Pct Of Tools to JANMAT

Chicago

• • • **The Chicago region of WAA** has transferred $15,899,995 of special purpose equipment, or 24 pct of its war surplus machine tool inventory, to the military services under the national Joint Army Navy Machine Tools program. Inspecting teams for JANMAT are screening the agency's national machine tool stocks and the amount so far billed by the Chicago region covers 1357 machines actually selected. Dismantling, crating and shipping the equipment is now in progress.

The biggest such job is at the Dodge-Chicago plant where one of the two giant block long "Greenlees," which turned out cylinder heads for B-29 engines, has been torn down and riggers, welders

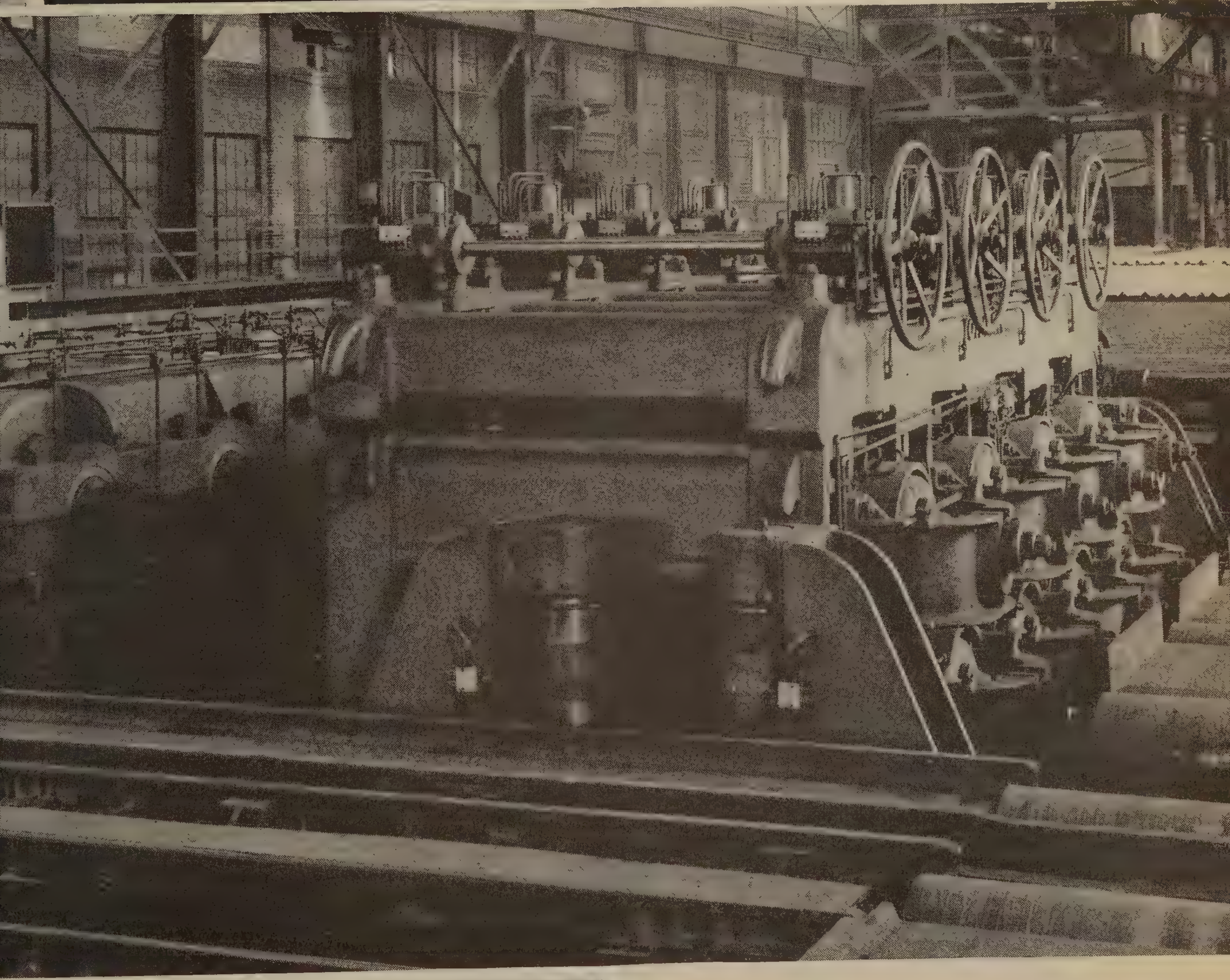
24″ I BEAM STRAIGHTENER

BUILT BY MORGAN Engineering

Illustrated is a Morgan Roller Straightener for structural shapes up to 24″ I beams.

It is equipped with four top and four bottom rolls, all of which are adjustable. These eight rolls are arranged to be connected by spindles to a separate enclosed gear box drive. All gear shafts are mounted in roller bearings. Vertical rolls are provided on both entry and delivery sides.

A section of roller table is mounted on one side of straightener to be shifted into the roller table line when straightener is not in use.



DESIGNERS • MANUFACTURERS • CONTRACTORS

BLOOMING MILLS • PLATE MILLS • STRUCTURAL MILLS • ELECTRIC TRAVELING CRANES • CHARGING MACHINES • INGOT STRIPPING MACHINES • SOAKING PIT CRANES • ELECTRIC WELDED FABRICATION • LADLE CRANES • STEAM HAMMERS • STEAM HYDRAULIC FORGING PRESSES • SPECIAL MACHINERY FOR STEEL MILLS

THE MORGAN ENGINEERING CO.
ALLIANCE, OHIO
Pittsburgh 1420 Oliver Building

INDUSTRIAL
PERFORATED METALS
ORNAMENTAL

ANY METAL • ANY PERFORATION

Industrial—Well balanced screens of excellent material and workmanship to assure maximum screen production combined with durability.

Ornamental—Approved patterns and finishes including many exclusive and characteristic designs for grilles and furniture. We invite your inquiries.

The Harrington & King PERFORATING Co.

5657 FILLMORE STREET—CHICAGO 44, ILL.
Eastern Office, 114 Liberty Street, New York 6, N. Y.

A Reputation for GOOD BUSINESS

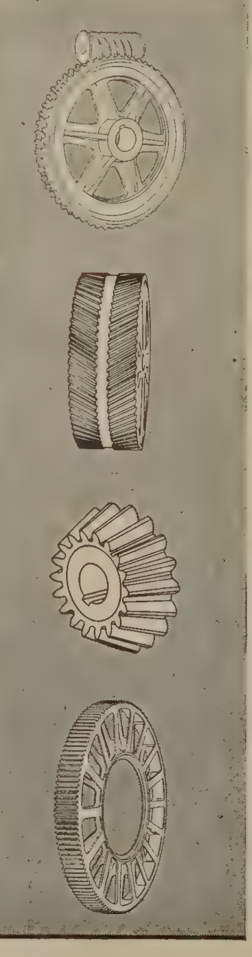
FOR over forty years, Earle Gear and Machine Company has manufactured gears of every size and type, together with special machinery. We have always operated with the idea that it's good business to guarantee our customers exactly the kind of work they want.

It's good business for you, too. You are assured that every Earle gear, large or small, is expertly made to meet your most exacting requirements—accurately cut to close tolerances for smooth, quiet operation and long trouble-free life with better power transmission.

We give our customers the kind of work they want, and it's on that basis that we ask *you* to write for estimates on your work. The EARLE GEAR & MACHINE CO., 4715 Stenton Ave., Phila. 44, Pa.

EARLE GEARS

SPUR, BEVEL, WORM, SPIRAL, HERRINGBONE AND RACKS, ETC.



and crane operators are now tackling the other one.

Officials estimated 50 freight cars will be needed to transport the two machines, each consisting of 61 units weighing approximately 600,000 lb, which cost the government $958,280.

JANMAT was considered by WAA regional officials as a boon to their disposal program because of the virtual impossibility of selling the equipment, most of it special purpose types, at even a fraction of its cost. With no apparent peacetime uses many of the machines would have to be offered as salvage. Machine tools constitute the largest single category of surplus property in the Chicago region's inventory, being $65,247,000, or 27 pct of the total at the end of August.

WAA Reports on War Plant Reconversion

Chicago

• • • The vital importance of war plant reconversion to peacetime industry and its effects upon the economy of the industrial midwest is emphasized in a preliminary report released by Arthur Rubloff, president of the new WAA real property advisory council. Mr. Rubloff heads up a group of eight leading midwest real estate experts in WAA zone three which includes the major portion of the Great Lakes and the midwest industrial area.

Already reconversion of surplus war plants by WAA has added from 10 to 15 pct to the prewar total of industrial facilities in this area and provided places of employment for hundreds of thousands of workers with annual payrolls in the hundreds of millions. The remaining WAA real property inventory in zone three totals 190 items of real estate with an original cost of $854,935,000.

The new WAA real property advisory council has been formed with the firm conviction of its members that the real property disposal program deserves the assistance of every possible public and private organization in this territory, which stretches from Pittsburgh to the Dakotas and from Canada to Kentucky. It is the council's intention to call for cooperation in the selling and leasing of the remaining plants from every contact which has an nterest in the long range progress f the midwest. These contacts include real estate organizations, hambers of commerce, utility, anking and railroad organizations, tate and city industrial development committees, and trade and usiness associations.

Michigan Foundry Group To Hold Annual Meeting From Oct. 31 to Nov. 1

Chicago

• • • **The problems of** foundrymen everywhere in the tight supply and uncertain quality of vital aw materials and in the necessity f training and expanding personnel, will be highlighted in the technical sessions of the annual Michigan Regional Foundry Conference at the Michigan State College, R. E. Olds Hall of Engineering, East Lansing, Oct. 31-Nov. 1, according to conference chairman Charles C. Sigerfoos, associate professor of engineering at the college.

Four chapters — Central Michigan, Detroit, Saginaw Valley and Western Michigan — of American Foundrymen's Assn., international technical society of the castings field, are co-sponsors, with Michigan State, of the meeting.

Prominent engineers and technologists of the castings industry will analyze current problems in high-level production and will describe latest techniques and methods. Among topics scheduled are: Operating the cupola under material difficulties; foundry training programs; work measurement and wage incentives; castings defects—their sources and remedies; mechanization of foundries; chemically-coated molding sands; testing the tendencies of molding sands; veteran students and their outlook on jobs and employers.

Speakers include Thomas W. Curry, metallurgist with Lynchburg (Va.) Foundry Co.; Alfred W. Gregg, technical assistant to the president, Whiting Corp., Harvey, Ill., vice chairman of the educational division of American Foundrymen's Assn.; R. G. McElwee, foundry alloy division manager for Vanadium Corp. of America, Detroit, who serves as vice chairman of the AFA gray iron division and head of its cupola research committee.

Also Harry M. St. John, brass foundry and forge shop superin-

ARMSTRONG *Drop Forged*
EYE BOLTS

They'll Carry the Load

Specify ARMSTRONG Drop Forged Eye Bolts for extra strength — correctly engineered proportions, forged-in quality, uniformity of design in all sizes and the best mild steel, heat treated to increase tensile strength. Built to tool standards, not hammered out as "tonnage" forgings, they always carry their load safely. Stocked by Armstrong distributors with or without shoulders, threaded or as blanks, in 13 sizes (Openings from 1/4" to 3 1/2" i.d.).

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
309 N. Francisco Ave. **Chicago 12, U. S. A.**
Eastern Warehouse and Sales: 199 Lafayette St., New York 12, N. Y.
Pacific Coast Whse. and Sales Office: 1275 Mission St., San Francisco 3, Calif.

OHIO SHEARS

SPECIAL STEEL
UNIFORM HARDNESS
ACCURATELY GROUND

O. K. SOLID STEEL SHEAR BLADES for maximum toughness and keen edge holding qualities. Recommended for heavy plate work. Made in 3 grades suitable for all jobs: O. K. BATTLE AXE for shearing up to and including 1/4 in. mild steel or equivalent, O. K. DURA-CHROME for shearing hot or cold plate steel up to 1 1/4 in. or equivalent, O. K. STANDARD for average runs and heavy plate shearing.

GANG SLITTERS are made to the same quality and specifications as O. K. SOLID STEEL SHEAR BLADES. Precision ground to ± .0002 tolerances on thickness, diameter, and bore—extremely high finish.

The **OHIO KNIFE** *Co.*
CINCINNATI 23, OHIO, U. S. A.

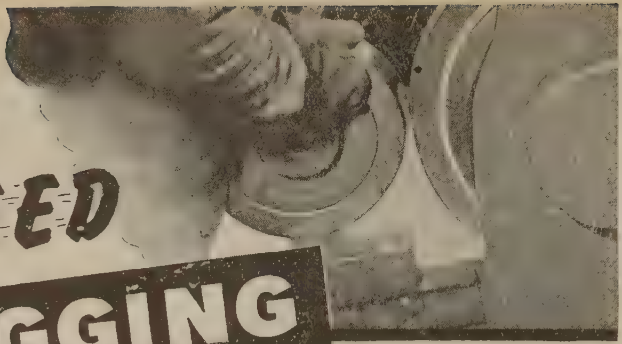
CLIP AND MAIL TODAY

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO
Gentlemen: Please send me without obligation your new catalog with specific data on Slitter Knives, Spacers, Straight Blades.

COMPANY____________________

NAME____________________

ADDRESS____________________



HIGH SPEED SNAGGING

Get the contracts. Figure closer. But do it on the preparation end—not on the precision end. You'll find Electro HIGH SPEED GRINDING WHEELS a tremendous help in meeting both price and delivery competition. They're faster, safer, and turn out a cleaner job on any metal whether working from swing frames, floor stands or in portable machines. Learn why. Send today for our Grinding Wheel Manual 645 in full color. It's free.

Service from Los Angeles or Buffalo

Electro TRADE MARK SINCE 1919

MANUFACTURERS of REFRACTORIES High-Speed GRINDING WHEELS CRUCIBLES ALLOYS High-Temperature CEMENTS

Electro REFRACTORIES & ALLOYS CORP.
344 DELAWARE AVE. (Est. 1919) BUFFALO 2, N. Y.

K-336A

There are many kinds of POWER COUPLINGS

LOVEJOY

SIMPLICITY

A characteristic of Lovejoy—matches EFFICIENCY and DEPENDABILITY that account for their preference with power engineers.

L-R Flexible Couplings

Examine this cutaway of Lovejoy Type "H" for heavy duties. Resilient load cushions, material best suited to service, suspended between rugged jaws. Electric steel castings and greater number of jaws for maximum load carrying capacity. Cushions always in sight. NO TEAR-DOWNS of machinery for changing.

—AND NO LUBRICATION!

Hours saved on this score alone! Get all facts on absorption of vibration, shock and surge, resistance to temperature extremes, fumes, etc. Sizes 1/6 to 2500 h.p. Send for Catalog with Quick-Finding Selector Charts eliminating tedious figuring. Wire or write

Pat. & Pats. Pend.

LOVEJOY Flexible Coupling Co.
5066 W. Lake St., Chicago 44, Ill.
Also mfrs. of Lovejoy-IDEAL Variable Speed Transmissions.

tendent for the Crane Co., Chicago, who received AFA's William H. McFadden gold medal this year for outstanding nonferrous casting research, and Elbert C. Troy, vice-president in charge of research and development for Dodge Steel Co., Philadelphia.

Instrument Society Elects New Officers At Annual Meeting

Chicago

• • • **The Instrument Society** of America held its Second Annual Instrument Conference and Exhibit, Sept. 8 through 12 at the Stevens Hotel in Chicago. The number of visitors registered by the second day surpassed the total number of registrations during the society's first conference last year. Technical lectures and educational meetings were featured throughout the 5 days of the conference. Many attended the plant trips which included the Standard Oil Co.'s new catalytic cracking unit at Whiting, Ind., the blast furnace openhearth and rolling department of Carnegie-Illinois South works, and a trip through the Central Scientific Co.'s Chicago plant.

During the week the following new officers were elected by the society: Paul Exline, Gulf Research Corp., Pittsburgh, president; H. C. Frost, Corn Products Refining Co., and F. H. Trapnell, E. I. Dupont de Nemours & Co., Wilmington, Del,. vice-presidents. Richard Rimbach, publisher of Instruments and the Instrument Maker, will continue as executive secretary and Hugh E. Ferguson, Peoples Gas Light & Coke Co., Chicago, will also continue as treasurer as their terms of office do not expire for 2 more years.

Other officers of the society continuing in office for 2 more years are Carl F. Kayan, professor of mechanical engineering, Columbia University, first vice-president, and H. H. Barnum, contracting engineer, vice-president.

More than 150 exhibitors took part in the convention. Instrument engineers from all over the country and from abroad attended and the industrial instruments and regulators division meetings attracted wide attention.

TIGER GRIP
ADVANCE
GLOVES
TRADE MARK

PREFERRED BY THE MAN ON THE JOB

TIGER GRIP

The Work Glove that Outwears Several Pairs of Ordinary Woven Fabric Gloves

The man on the job has found that "TIGER GRIP" gives him more of everything he expects from a work glove! "TIGER GRIP" gives him *more* protection —because its specially knitted material contains hundreds of "loops" in every square inch, to cushion and protect the hand. He gets *more* wear — because these entirely different gloves outlast several pairs of ordinary woven fabric gloves! And he gets washability without excessive shrinkage! Treated with Johnson's "DRAX" to make it water repellent! ADVANCE Work Gloves are laboratory tested, and re-tested under actual working conditions!

Guaranteed by Good Housekeeping
REPLACEMENT OR REFUND OF MONEY IF DEFECTIVE OR NOT AS ADVERTISED THEREIN

Send For New CATALOG

Big, new catalog lists full line of ADVANCE work gloves including leather palm gloves, flannel gloves, wire stitched gloves, welder's gloves, etc., as well as a complete line of safety and protective clothing for every industry.

"A Better Work Glove For Every Purpose"

ADVANCE
GLOVE MANUFACTURING CO.
DEPT. I.A., 901 W. LAFAYETTE BLVD.
DETROIT 26, MICH.
Detroit • Toledo • Chicago • Rome, Ga.

Weekly Gallup Polls

(CONTINUED FROM PAGE 121)

blame on government, which could mean either of the major political parties since they share power in Washington. Those blaming business and industry are similarly divided among voters who name retailers, wholesalers, manufacturers, distributors, etc., and the answer labor is made up of such responses as labor leaders, labor, union labor, strikers, etc.

When the problem is considered from the more constructive approach of trying to find a remedy for high prices, voters' opinions are as varied as they are as to the cause.

The question was asked:

"What do you think could be done to bring about lower prices?"

The replies:

	Pct
Buyers' strike, stop unnecessary buying	20
Return to government regulation	13
Eliminate strikes, reduce wages	12
Increase production	12
Business should voluntarily lower prices	2
Stop exporting so much	3
Lower business profits	5
Change the administration	2
Everybody cooperate	1
Miscellaneous	7
No way to bring prices down	4
Don't know	24
Total	105

Some people gave several answers so the total adds to more than 100 pct.

Of course, if prices continue to rise, substantial support for any one of these remedies might develop, such as heightened public demand for return to some kind of government control.

Rubber Consumption Drops

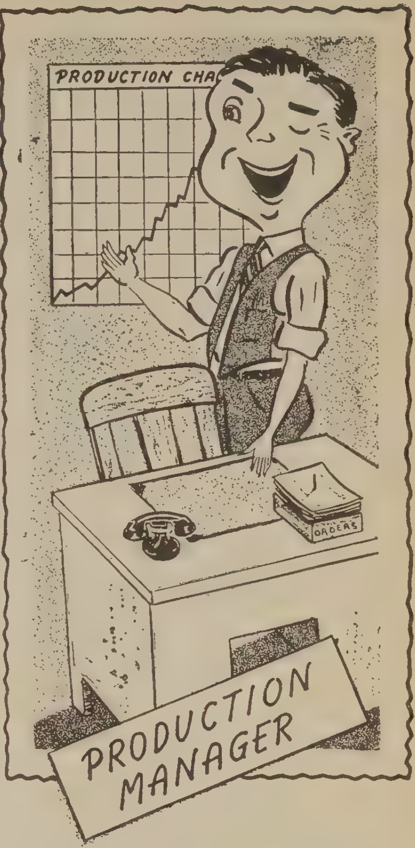
Washington

• • • **A decline in** use of natural and synthetic rubber during July brought total United States consumption for the month to 78,309 tons as compared with June consumption of 85,109 tons.

At the same time, consumption of natural rubber rose from 50 pct to 51.4 pct of the total.

June 30 stocks of natural rubber, including total private and government holdings, were 345,175 tons. Imports during July were reported as 57,626 tons (before shrinkage) of which 421 tons were reexported.

PORTRAIT OF A



who reports a decided increase in total output because he uses
SCREW MACHINE PRODUCTS
made FASTER and BETTER for LESS
by
U•S•AUTOMATIC CORPORATION
Screw Machine Products
AMHERST • OHIO

CHICAGO
DETROIT
INDIANAPOLIS
U.S. AUTOMATIC
NEW YORK
PITTSBURGH
PHILADELPHIA

Machine Tool Attendance of 175,000 Surpasses Expectations

• • • Still the topic of conversation wherever they cut a metal chip, the 1947 Machine Tool Show surpassed the wildest expectations of the industry and its guests alike and turned out to be the most colossal industrial exposition of all time, and under one roof, at that.

Most amazing was the attendance, which cautious heads before the show hoped would reach 100,000, and who were happily dumbfounded as the total turnout, like Topsy, just grew, to more than 175,000. By comparison, 80,000 attended that 1935 show in Cleveland.

To all appearances, the 1947 show went off without a hitch, down to the minutae of detail, which is no small tribute to the show committee, Tell Berna, general manager of the National Machine Tool Builders Assn., Mrs. Frida Selbert, NMTBA secretary, and Clapp & Poliak, show management.

Behind the scenes, however, there were several frenzied moments; at one point, it seemed the plant air conditioning equipment was out of order and beyond repair for the duration of the show, and a new heat wave reported on the way by the weather experts; about the time the first machines were ready to be moved in it was found that the NMTBA had to supply the light bulbs, some $10,000 worth, for the show area; once the equipment started in, exhibitors, according to reports, found they had to pay the local millwrights some pretty fancy prices for moving in machines (as high as $3500); as the show ended, the same millwrights had become upset for some reason or other and were toying with the idea of a strike of some sort.

Day among days at the show was Saturday, Sept. 20, when a train carrying some 800 foremen from one industrial area rolled into town and discharged its load of passengers, some of whom through bottled spirits were somewhat the worse for wear.

Effect of the Show Will Not Be Noted in the Market For Several Months

○ ○ ○

While the 1947 Machine Tool Show is history, qualified observers in the industry find it difficult to gage the show's effect. In general, however, the industry will be satisfied if $70 million in business comes in between now and Jan. 1. This would bring the industry's total to $300 million for 1947, which is not bad, but by no means boom business, particularly from the standpoint of units and the present high prices. Sales of machine tools in July fell off 15 pct; August sales declined 20 pct; effect of the show will be felt from the first of October on. Many machines displayed were sold before they arrived in Chicago, particularly the special equipment, and orders that were being held pending the show have already been placed.

In major selling sectors, particularly Cincinnati, the show has already produced a flurry of inquiries, foreign and domestic, but the general attitude on the part of the trade is that several months will be required for any appreciable change to be noted in the market.

Foreign buyers, according to Cincinnati sources, are probably the most interested and enthusiastic, but until some stable dollar credit exchange can be reached and maintained, many foreign orders are not forthcoming. European buyers in particular have to be content with the lower cost standard, general purpose tools rather than the special equipment.

Most Cincinnati machine tool builders are continuing to book contract work in the meantime, while waiting for the pickup in business.

In Cleveland, requisition by the Army and Navy of machine tools for national defense, which has temporarily stopped the bulk of sales of government-owned machine tools by Cleveland WAA operatives, has the trade buzzing.

According to Col. James H. Frier, Jr., WAA regional director, to comply with new procedures set up under the armed forces program which has been tagging machine tools here since last February, the Cleveland region must now submit to Washington lists of all tools it proposes to advertise, and cancel all sales until military requirements are determined.

Colonel Frier told a meeting of WAA machine tool dealers' advisory committee that this might mean as much as 75 pct of the regional machine tool inventory being withheld from sale. Washington advised that 30 days would probably elapse before he would have the first residue of machine tools to offer private buyers.

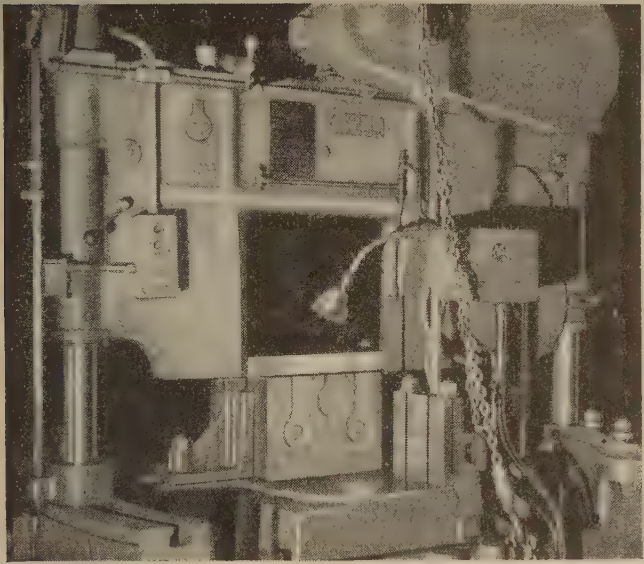
Colonel Frier said he hoped the new control might be relaxed inasmuch as the armed forces had a big problem in finding suitable storage space.

Committee members asked Colonel Frier whether machine tools in actual use in private industry would not, in fact, constitute a better strategic reserve than being stored idle in warehouses. Colonel Frier expressed the opinion that this aspect of the situation must be known to Washington, and undoubtedly arrangements would be made to furnish industry with such machines as are absolutely essential.

In the East, Arthur H. Starrett, president, L. S. Starrett Co., Athol, Mass., following the annual meeting of that company, said the corporation currently is operating 45 hr a week or 9 hr a day, 5 days a week. Employment is between 1600 and 1700 persons.

The company has a very sizable backlog. It displayed 15 new items at the Chicago show of the National Tool Manufacturers Assn., which, he said, may further stimulate business. These products, he added, include a complete line of tubular micrometers.

Marvel Saws Cut off Hours from Die Maintenance Time

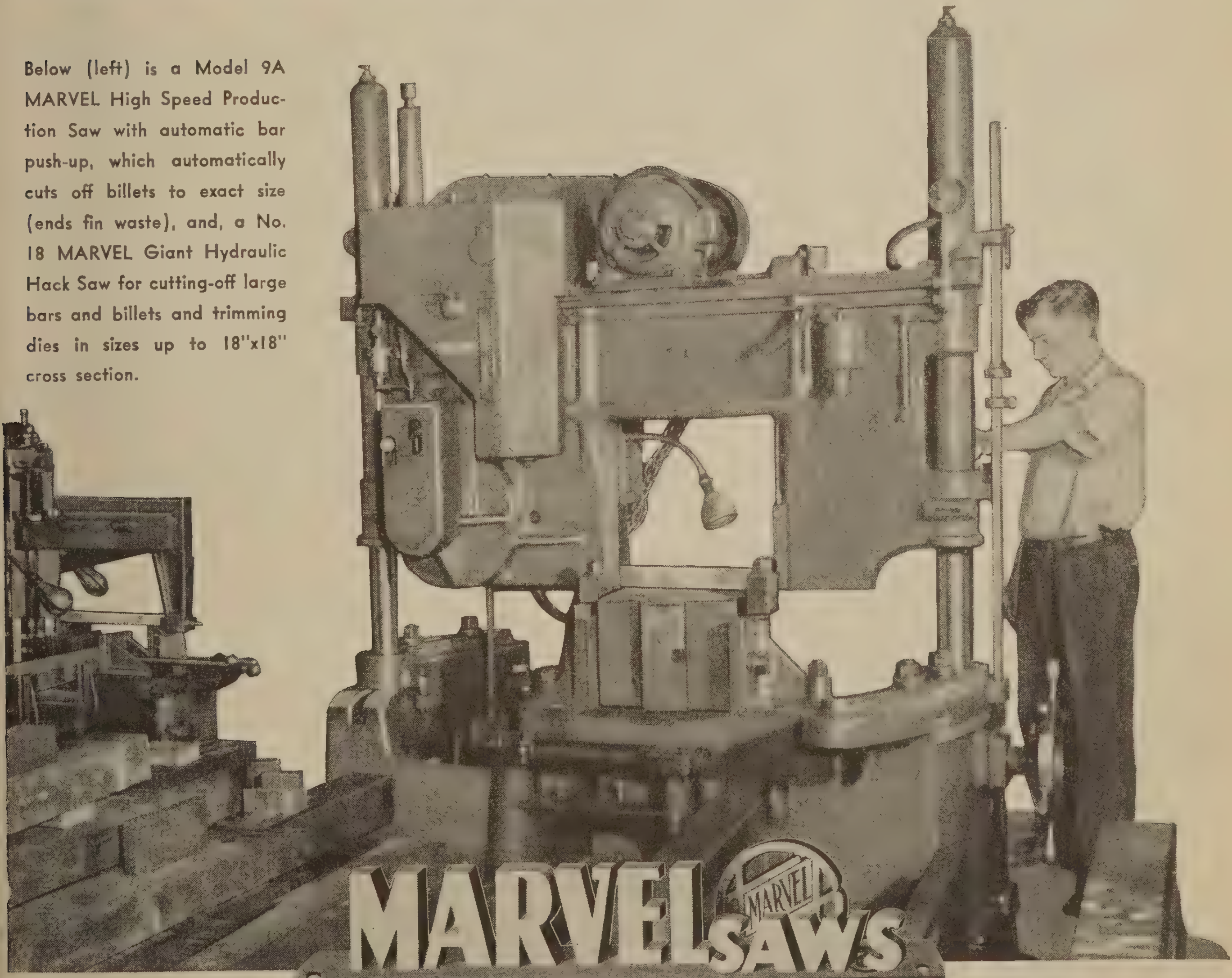


Hubbard & Company, Pittsburgh, manufacturers of pole line hardware, picks, hammers and other drop forged specialties, use MARVEL Saws to eliminate tedious hours in making and maintaining their giant forging dies. Not only do these saws do all regular cutting-off of steel for the machine shop, die blocks for die shop and exact size billets for the forge shop, they also materially cut the cost of die maintenance.

Previously, it was necessary to plane the face of dies being reworked. This was a long and tedious job because the die face is always work-hardened with hard spots that had to be chipped or ground out before the planer tool could make a cut. Now with MARVEL Saws, the face of a die is speedily and accurately "skinned"—a thin slice is sawed off just behind the hard spots, after this speedy "skinning" and a single facing cut on the planer, the die is ready for the die sinker. This modern MARVEL method is saving Hubbard a lot of dies, materials, labor and machine time.

For quick reference see our section in Sweet's File—Mechanical Industries, or write for catalog.

Below (left) is a Model 9A MARVEL High Speed Production Saw with automatic bar push-up, which automatically cuts off billets to exact size (ends fin waste), and, a No. 18 MARVEL Giant Hydraulic Hack Saw for cutting-off large bars and billets and trimming dies in sizes up to 18"x18" cross section.



ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"

5700 BLOOMINGDALE AVE.
CHICAGO 39, U.S.A.

NONFERROUS METALS

. . . News and Market Activities

Copper

• • • **The domestic** copper market is holding firmly at current prices. Most producers had sold out all their October tonnage by last week. Although it is too early to gage accurately November requirements, early contacts with consumers indicate that demand should equal or exceed October. Wire mills are still ordering at peak levels. Brass mill demand has improved somewhat from the summer low points, caused by reduced orders, inventory reductions and summer vacations. Now it is reported by the brass mills that their order volume is building up again, reflecting the end of inventory reduction by their customers. The foreign market for copper continues poor and South American copper is being diverted in larger volume to meet the needs of the domestic market. While the foreign market continues thin, the F.A.S. price is being held just below the domestic price. During the week Scovill Mfg. Co. had a fire in the power plant which shut down the entire plant for a day. However, the effects of this development may be expected to reduce their operations for weeks.

There is a price spread in brass and bronze ingots initiated when one smelter lowered its price below the established market for the second time recently. Some producers expect this price spread to continue as they do not expect to be able to meet this price unless the price of scrap should come down. August shipments of ingot brass and bronze totaled 18,589 tons, nearly 2000 tons above the shipment tonnage as reported by the industry.

Lead

• • • **Producers report** that commitments for October lead delivery already exceeded September tonnages. There is a marked improvement evident in lead consumption since the summer letdown. Producers are of the opinion that the current price schedule will remain firm for the present. Foreign demand for lead is reported to be strong.

•

Zinc

• • • **Demand** for all grades of zinc has improved, according to producers, and, coupled with the diversion of some surplus metal to the permanent stockpile, can be expected to remove the threat of any early price decline. Special High Grade zinc remains in relatively short supply but Prime Western is readily available. If steel sheets were available to galvanizers in larger tonnages, requirements for Prime Western would be somewhat higher.

•

Antimony

• • • **The weakness** in the antimony market reported several weeks ago when efforts were being made to market in this country 1000 tons of Chinese antimony is said by the industry to have abated. The Chinese antimony has not yet been shipped from Shanghai and it is no longer being offered to the domestic market. It is expected that this metal will be bought by the government for the stockpile. Producers say that the antimony market is relatively firm and consumers are able to obtain all their requirements. The burden of obtaining allocations for this metal is entirely the responsibility of the consumer under current regulations.

Monthly Average Prices

• • • **The average prices of the major nonferrous metals in September based on quotations appearing in The Iron Age, were as follows:**

	Cents Per Pound
Electrolytic copper, Conn. Valley	21.50
Lake copper, Conn. Valley	21.625
Straits tin, New York	80.00
Zinc, East St. Louis. .	10.50
Zinc, New York	11.005
Lead, St. Louis	14.80
Lead, New York	15.00

Nonferrous Metals Prices

Cents per pound

	Sept. 24	Sept. 25	Sept. 26	Sept. 27	Sept. 29	Sept. 30
Copper, electro, Conn.	21.50	21.50	21.50	21.50	21.50	21.50
Copper, Lake, Conn.	21.625	21.625	21.625	21.625	21.625	21.625
Tin, Straits, New York	80.00	80.00	80.00	80.00	80.00	80.00
Zinc, East St. Louis	10.50	10.50	10.50	10.50	10.50	10.50
Lead, St. Louis	14.80	14.80	14.80	14.80	14.80	14.80

•

Cadmium

• • • **Producers report** that the cadmium market is relatively easier than it was with consumers able to obtain most of their requirements at this time. The price of $1.75 per lb is expected to be continued by producers for the present. As a byproduct of lead and zinc production, cadmium output has been affected by the curtailment of the subsidy program for those metals.

•

Red Metal Scrap Weaker

New York

• • • **The scrap market** showed some weakness in copper and brass items last week but it was not translated into lower prices. According to dealers, with copper selling at 21.50¢, copper and brass scrap is being bought by refineries at the equivalent of 19¢ copper and by ingot producers at the equivalent of 16¢ copper. Were the refineries to buy scrap on the 21.50¢ basis, dealers observe that smelters would be unable to buy at the lower levels which permit ingot sales well below the 21.50¢ level.

NONFERROUS METALS PRICES

Primary Metals

(Cents per lb, unless otherwise noted)

Aluminum, 99+%, f.o.b. shipping point (min. 10,000 lb)	15.00
Aluminum pig, f.o.b. shipping point	14.00
Antimony, American Laredo Tex.	33.00
Beryllium copper, 3.75-4.25% Be; dollars per lb contained Be	$17.00
Beryllium aluminum 5% Be, dollars per lb contained Be	$35.50
Cadmium, del'd	$1.75
Cobalt, 97-99% (per lb)	$1.65 to $1.72
Copper electro, Conn. Valley	21.50
Copper, lake, Conn. Valley	21.625
Gold, U. S. Treas., dollars per oz.	$35.00
Indium, 99.8%, dollars per troy oz.	$2.25
Iridium, dollars per troy oz.	$80 to $90
Lead, St. Louis	14.80
Lead, New York	15.00
Magnesium, 99.8+%	20.50
Magnesium, sticks, carlots	36.00
Mercury, dollars per 76-lb flask, f.o.b. New York	$81 to $83
Nickel, electro, f.o.b. New York	37.67
Palladium, dollars per troy oz.	$24.00
Platinum, dollars per troy oz.	$62 to $65
Silver, New York, cents per oz.	71.375
Tin, Straits, New York	80.00
Zinc, East St. Louis	10.50
Zinc, New York	11.005
Zirconium copper, 6 pct Zr. per lb contained Zr	$8.75

Remelted Metals

Brass Ingot

(Cents per lb, in carloads)

85-5-5-5 ingot	
No 115	17.50-18.00
No. 120	17.00-17.50
No. 123	16.50-17.00
80-10-10 ingot	
No. 305	21.50-22.00
No. 215	19.50-20.00
88-10-2 ingot	
No. 210	27.25-27.75
No. 215	25.75-26.25
No. 245	19.75-20.25
Yellow ingot	
No. 405	13.75-14.50
Manganese Bronze	
No. 421	15.75-16.50

Aluminum Ingot

(Cents per lb, lots of 30,000 lb)

95-5 aluminum-silicon alloys:	
0.30 copper, max.	15.75
0.60 copper, max.	15.50
Piston alloys (No. 122 type)	14.25
No. 12 alum. (No. 2 grade)	13.75
108 alloy	14.00
195 alloy	14.75
AXS-679	14.25

Steel deoxidizing aluminum, notch-bar, granulated or shot

Grade 1—95 pct-97½ pct	14.50
Grade 2—92 pct-95 pct	12.75
Grade 3—90 pct-92 pct	12.00-12.25
Grade 4—85 pct-90 pct	11.50-11.75

Electroplating Supplies

Anodes

(Cents per lb, f.o.b. shipping point in 500 lb lots)

Copper, frt. allowed	
Cast, oval, 15 in. or longer	37⅝
Electrodeposited	32.34
Rolled, oval, straight, delivered	32.59
Brass, 80-20, frt allowed	
Cast, oval, 15 in. or longer	33⅝
Zinc, Cast, 99.99	18¾
Nickel, 99 pct plus, frt allowed	
cast	51
Rolled, depolarized	52
Silver 999 fine	
Rolled, 1000 oz. lots, per troy oz.	67¼

Chemicals

(Cents per lb, f.o.b. shipping point)

Copper cyanide, 100 lb drum	43.00
Copper sulphate, 99.5, crystals, bbls	11.50
Nickel salts, single, 425 lb bbls, frt allowed	14.50
Silver cyanide, 100 oz. lots, per oz.	54.00
Sodium cyanide, 96 pct, domestic, 200 lb drums	15.00
Zinc cyanide, 100 lb drums	34.00
Zinc, sulphate, 89 pct, crystals, bbls, frt allowed	7.75

Mill Products

Aluminum

(Cents per lb, base, subject to extras for quantity, gage, size, temper and finish)

Drawn tubing: 2 to 3 in. OD by 0.065 in. wall; 3S, 43.5¢; 52S-O, 67¢; 24S-T, 71¢; base, 30,000 lb.

Plate: ¼ in. and heavier: 2S, 3S, 21.2¢; 52S, 24.2¢; 61S, 23.8¢; 24S, 24S-AL, 24.2¢; 75S, 75S-AL, 30.5¢; base, 30,000 lb.

Flat Sheet: 0.136-in. thickness: 2S, 3S, 23.7¢; 52S, 27.2¢; 61S, 24.7¢; 24S-O, 24S-OAL, 26.7¢; 75S-O, 75S-OAL, 32.7¢; base, 30,000 lb.

Extruded Solid Shapes: factor determined by dividing the perimeter of the shape by its weight per foot. For factor 1 through 4, 3S, 26¢; 14S, 32.5¢; 24S, 35¢; 53S, 61S, 28¢; 63S, 27¢; 75S 45.5¢; base, 30,000 lb.

Wire, Rod and Bar: screw machine stock, rounds, 17S-T, ¼ in., 29.5¢; ½ in., 37.5¢; 1 in., 26¢; 2 in., 24.5¢; hexagons, ¼ in., 35.5¢; ½ in., 30¢; 1 in., 2 in., 27¢; base, 5000 lb. *Rod:* 2S, 3S, 1¼ to 2½ in. diam. rolled, 23¢; cold-finished, 23.5¢ base, 30,000 lb. *Round Wire:* drawn, coiled, B & S gage 17-18; 2S, 3S, 33.5¢; 56S, 39.5¢; 10,000 lb base. B & S gage 00-1: 2S, 3S, 21¢; 56S, 30.5¢. B & S 15-16; 2S, 3S, 32.5¢; 56S, 38¢; base, 30,000 lb.

Magnesium

(Cents per lb f.o.b. mill. Base quantity 30,000 lb.)

Sheet and Plate: Ma. FSa. ¼ in., 54¢-56¢; 0.188 in., 56¢-58¢; B & S gage 8, 58¢-60¢; 10, 59¢-61¢; 14, 69¢-74¢; 16, 79¢-81¢; 18, 87¢-89¢; 22, $1.25-$1.31; 24, $1.71-$1.75.

Round Rod: M, diam, in., ¼ to ⅜, 47¢; ½ to ¾, 45¢ 1¼ to 2½, 43.5¢; 3½ to 5, 42.5¢. Other alloys higher.

Square, Hexagonal Bar: M, size across flats, in., ¼ to ⅜, 52.5¢; ½ to ¾, 47.5¢; 1¼ to 2½, 45¢; 3½ to 5, 44¢. Other alloys higher.

Solid Shapes, Rectangles: M, form factors, 1 to 4, 46¢; 11 to 13, 49¢; 20 to 22, 51.5¢; 29 to 31, 59.5¢; 38 to 40, 75.5¢; 47 to 49, 98¢. Other alloys higher.

Round Tubing: M, wall thickness, outside diam, in., 0.049 to 0.057, ¼ to 5/16, $1.21; 5/16 to ⅜, $1.12; ⅜ to 7/16, 97¢; 0.058 to 0.064, 7/16 to ½, 89¢; ½ to ⅝, 81¢; 0.065 to 0.082, ⅝ to ¾, 76¢; ¾ to 1, 72¢; 0.083 to 0.108, 1 to 2, 68¢; 0.165 to 0.219, 2 to 3, 59¢; 3 to 4, 57¢. Other alloys higher.

Nickel and Monel

(Cents per lb, f.o.b. mill)

	Nickel	Monel
Sheets, cold-rolled	54	43
No. 35 sheets	..	41
Strip, cold-rolled	60	44
Rod		
Hot-rolled	50	39
Cold-drawn	55	44
Angles, hot-rolled	50	39
Plates	52	41
Seamless tubes	83	71
Shot and blocks	..	31

Zinc

(Cents per lb, f.o.b. mill)

Sheet, l.c.l.	15.50
Ribbon, ton lots	14.50
Plates	
Small	13.50
Large, over 12 in.	14.50

Copper, Brass, Bronze

(Cents per pound, f.o.b. mill effective June 11)

	Extruded Shapes	Rods	Sheets
Copper	33.53	....	33.68
Copper, hot-rolled	....	30.03	....
Copper, drawn	....	31.03	....
Low brass	34.04*	31.07	31.38
Yellow brass	32.39*	29.32	29.63
Red brass	34.65*	31.68	31.99
Naval brass	29.56	28.31	34.25
Leaded brass	27.98	24.39	30.13
Commercial bronze	35.52*	32.80	33.11
Manganese bronze	33.14	31.64	37.75
Phosphor bronze, 5 pct.	53.25*	52.25	52.00
Muntz metal	29.17	27.92	32.36
Everdur, Herculoy, Olympic, etc.	37.07	35.57	38.44
Nickel silver, 5 pct.	41.20	40.28	38.67
Architectural bronze	27.94	....	....

*Seamless tubing.

Scrap Metals

(Dealers' buying prices, f.o.b. New York in cents per pound.)

Brass Mill Scrap

(Lots of less than 15,000 lb.)

Cartridge brass turnings	14½
Loose yellow brass trimmings	15½

Copper and Brass

No. 1 heavy copper and wire	15½—16
No. 2 heavy copper and wire	14½—15
Light copper	13 —13½
Auto radiators (unsweated)	8½— 9
No. 1 composition	10½—11
No. 1 composition turnings	10 —10½
Clean red car boxes	9 — 9½
Cocks and faucets	8½— 9
Mixed heavy yellow brass	6½— 7
Old rolled brass	7 — 7¼
Brass pipe	8 — 8½
New soft brass clippings	11 —11½
Brass rod ends	8½— 9
No. 1 brass rod turnings	8 — 8½

Aluminum

Alum. pistons free of struts	3½— 4
Aluminum crankcases	5½— 6
2S aluminum clippings	8 — 8½
Old sheet & utensils	5½— 6
Mixed borings and turnings	— 2
Misc. cast aluminum	5 — 5½
Dural clips (24S)	4½— 5

Zinc

New zinc clippings	5½— 6
Old zinc	4¼— 4½
Zinc routings	2½— 3
Old die cast scrap	2½— 3

Nickel and Monel

Pure nickel clippings	15½—17½
Clean nickel turnings	14 —15
Nickel anodes	16 —17
Nickel rod ends	16 —17
New Monel clippings	12 —13
Clean Monel turnings	7 — 8
Old sheet Monel	10 —10½
Old Monel castings	7½— 8
Inconel clippings	8 — 8½
Nickel silver clippings, mixed	7½— 8
Nickel silver turnings, mixed	5½— 6

Lead

Soft scrap lead	10 —10½
Battery plates (dry)	5 — 5½

Magnesium Alloys

Segregated solids	6½— 7
Castings	4½— 5½

Miscellaneous

Block tin	63 —65
No. 1 pewter	48 —50
No. 1 auto babbitt	38 —40
Mixed common babbitt	11½—12
Solder joints	13 —13½
Siphon tops	38 —39
Small foundry type	13 —13½
Monotype	12 —12½
Lino and stereotype	11½—12
Electrotype	9½—10
New type shell cuttings	11 —11½
Clean hand picked type shells	4½— 5
Lino and stereo dross	5 — 5½
Electro dross	3 — 3¼

Lead Products

(Cents per lb)

F.o.b. shipping point freight collect Freight equalized with nearest free delivery point.

Full lead sheets	18.25
Cut lead sheets	18.75
Lead pipe, manufacturing point	17.50
Lead traps and bends	List +42%
Combination lead and iron bends and ferrules, also combination lead and iron ferrules	List +42%
Lead wool	19.50

When you're in a hurry for
Stainless Steel

RUSH ORDER
UNITED STATES STEEL SUPPLY COMPANY
JA

—remember this SYMBOL of SERVICE

UNITED STATES STEEL SUPPLY COMPANY
USS
STEELS
SERVICE

NOW, from our nine conveniently located warehouses, we can make prompt deliveries of U·S·S Stainless Steel. While it costs no more than other stainless steels—its use assures uniform fabrication and the finest performance in service. So, if you need Stainless Steel quickly—or if you require High Strength Steels, Alloy Steels, Carbon Steels, Machinery, etc., get in touch with our warehouse nearest you.

Whatever you must have in steel, you can rely on our every effort to give you prompt, efficient service. Telephone, wire or write.

UNITED STATES STEEL SUPPLY COMPANY

CHICAGO (90)	1319 Wabansia Ave., P. O. Box MM	BRUnswick 2000
BALTIMORE (3)	Bush & Wicomico Sts., P. O. Box 2036	GIlmor 3100
BOSTON	176 Lincoln St., (Allston 34), P. O. Box 42	STAdium 9400
CLEVELAND (14)	1394 East 39th St.	HEnderson 5750
LOS ANGELES (54)	Slauson Avenue (Between Alameda and Sante Fe)	LAfayette 0102
MILWAUKEE (1)	4027 West Scott St., P. O. Box 2045	MItchell 7500
NEWARK (1), N. J.	Foot of Bessemer St., P. O. Box 479	BIgelow 3-5920 REctor 2-6560—BErgen 3-1614
PITTSBURGH (12)	1281 Reedsdale St., N. S.	CEdar 7780
ST. LOUIS (3)	311 S. Sarah St., P. O. Box 27	LUcas 0440
TWIN CITY	2545 University Ave., St. Paul (4), Minn.	NEstor 7311

UNITED STATES STEEL

SCRAP

. . . News and Market Activities

Prices Increase in Eastern Markets

New York

• • • With the exception of the New York and Boston, heavy melting steel prices remained stable this week at their earlier levels. The first price change on heavy melting steel took place on the Eastern seaboard after much hesitation with the $32.00 price which has prevailed in New York for the past few weeks moving up to $32.50, and the Boston price going up from $30.37 to $31.37.

There has been some in buying in outside markets for transshipment during the week, while otherwise the scrap market has remained in that same uneasy calm that characterized the last week's market.

Although heavy melting steel prices, other than the two mentioned above, have shown virtually no change for the past 6 weeks, there is a growing feeling in the selling end of the industry that the prices may come in for considerable testing. It is pointed out that a great deal of material was bought at the high prices preceding this recent lull.

While the nation's overall scrap supply picture is not encouraging, mills as a whole report that they now have comfortable supplies. Certainly most stocks are far better than they were at this time last year. Therefore in the past few weeks most of them have been able to buy in rather limited quantities and inventories on the ground are not yet believed low enough to cause purchasing agents sleepless nights.

•

PITTSBURGH—In the absence of any substantial new orders the market on heavy melting steel remained at a $38 top this week. Dealers are of course pressing local buyers and claiming their yard receipts are falling off but this remains to be proved. Several mills, planning to enter the market for tonnages are reported holding off because of price uncertainty. Mill scrap inventories are reported comfortable at almost all plants and until one or two buyers feel the need to step in for a large tonnage the trade sees little reason for a price change. Even then there is no strong feeling as to just how the market will react. This week marked the virtual end of the older higher priced orders, leaving the way clear to price testing if there is a renewal of activity next week.

•

CHICAGO — Mill inventories in the midwest are better than they have been at any time since last spring. However none of the producers have enough inventory to stay out of the market forever and dealers for the past week have been attempting to build up a little tonnage in the yards or elsewhere so as to be in a long position when the mills get ready to buy. Railroad scrap brought prices somewhat higher last week than had generally been expected. Foundries continue to pay through the nose for good steel and cast scrap.

•

CLEVELAND — The scrap market here and in the valley is in a very volatile condition and is displaying some of the same symptoms which preceded the last price flurry. Shipments to most consumers, large and small, are not very good. Dealers are being accused of holding back scrap and talking higher prices. Brokers are being accused of paying fancy prices. Buyers are telling the trade they have 30-day inventories. The old orders are practically complete and reports of high prices being paid in remote areas are more numerous than ever. Price testing could start over the weekend as some of the major consumers are about due to come back onto local markets. The raiding of remote areas is already on.

•

BOSTON—The market is an apparent paradox. Brokers generally say they will not pay more than $30.25 for heavy steel. Again, sales are reported at $31, $31.50, and up to $32.50. Nobody has an answer for the discrepancy in prices. Again, New York has bought chemical borings at $28.50 Providence; offers $29 Boston. Local brokers say $27 is the limit they will pay. However, the scrap market generally cannot be called active.

•

PHILADELPHIA — Heavy melting grades held firm at previous levels last week but there are some upward adjustments of other grades. One mill was able to place a moderate tonnage at $37 but large tonnages are unobtainable as brokers do not expect to be able to cover in the face of the strong market. According to some factors in the market mills are said to be paying higher prices for railroad and industrial scrap in order to hold the dealer scrap market without change. Heavy axle turnings have been sold at $39; breakable cast at $47; turnings at $30.50; and low phos at $43. Last week's report that the Reading Co. sold specialties at $47 was based in error on the price of cast iron carwheels. Reading specialties sold at $45.

NEW YORK — Following a long period of near stagnation, the local market saw No. 1 move upward from the $32 price to a $32 to $33 range after much hesitation. Supplies in yards had been dwindling for some time under the old price.

•

CINCINNATI — Consumers are still paying around $39 for No. 1 heavy melting with prices on other grades ranging up and down on the usual price adjustments. Most mills indicate that while their inventories are in fair condition they are not building too much for the winter months because of a desire to hold control on prices.

•

DETROIT — There is no change in Detroit scrap prices again this week as shipments continue to the principal mill buyers here against orders placed at $37 delivered for openhearth grades. It is reported that earmarked scrap is being sold at $34.32 or $17 over OPA.

•

BUFFALO — Buffalo scrap prices were very firm this week as traders marked time in an optimistic frame of mind confident that mills would have to raise the ante on new contracts. A 50 pct. decline from a month ago in open market supplies coupled with reports that bid on many plant lists were $1 to $2

•

BIRMINGHAM—As prices remain unchanged in this market for the sixth consecutive week movement of scrap is relatively light. Anticipating heavy demand from out of district points for the winter months, dealers are reluctant to sell at present quotations.

•

ST. LOUIS—Movement has been good as shippers rush their material to market to obtain the advantage of prevailing prices and to fill orders before they expire on Oct. 1, when the consumers expect to see new prices established. Shippers are said to be reluctant to accept prices below present levels, which are unchanged for last week.

•

TORONTO—In an effort to bring out vitally needed scrap before winter sets in, new price ceilings went into effect Sept. 23, advancing the price of heavy melting steel from the former rate of $17.50 gross ton delivered Hamilton, to $22 per ton, and all other items on the list for Ontario and Quebec are boosted a similar amount. The electric furnace classification has been dropped and authorizations for special electric size are withdrawn. Also the preparation allowance for No. 1 heavy melting steel is now $3 per ton for Ontario and Quebec, while dealers' commissions have been advanced from 50¢ to $1 a ton. For the Prairie provinces and British Columbia, mixed steel scrap has been increased by $3 per ton and all other grades by $4.25 a ton. Preparation allowance for No. 1 heavy melting steel scrap is $3 a ton and for No. 2 heavy melting, $2 a ton.

IRON AND STEEL SCRAP PRICES

PITTSBURGH

Per gross ton delivered to consumer:

No. 1 hvy. melting	$37.50 to $38.00
RR. hvy. melting	41.50 to 42.00
No. 2 hvy. melting	37.50 to 38.00
RR. scrap rails	45.50 to 46.00
Rails 2 ft. and under	49.00 to 49.50
No. 1 comp'd bundles	37.50 to 38.00
Hand bdld. new shts.	37.50 to 38.00
Hvy. axle turn.	36.00 to 37.00
Hvy. steel forge turn.	36.00 to 37.00
Mach. shop turn.	33.00 to 33.50
Shoveling turn.	34.00 to 35.00
Mixed bor. and turn.	32.50 to 33.00
Cast iron borings	33.00 to 34.00
No. 1 cupola cast.	42.50 to 43.50
Hvy. breakable cast	37.00 to 37.50
Malleable	52.00 to 53.00
RR. knuck and coup.	47.50 to 48.00
RR. coil springs	47.50 to 48.00
RR. leaf springs	47.50 to 48.00
Rolled steel wheels	47.50 to 48.00
Low phos.	45.00 to 45.50

CHICAGO

Per gross ton delivered to consumer:

No. 1 hvy. melting	$38.50 to $39.00
No. 2 hvy. melting	38.50 to 39.00
No. 1 bundles	38.50 to 39.00
No. 2 dealers' bundles	38.50 to 39.00
Bundled mach. shop turn.	38.50 to 39.00
Galv. bundles	36.50 to 37.00
Mach. shop turn.	33.50 to 34.00
Short shov. turn.	35.50 to 36.00
Cast iron borings	34.50 to 35.00
Mix. borings & turn.	33.50 to 34.00
Low phos. hvy. forge.	45.00 to 46.00
Low phos. plates	42.00 to 42.50
No. 1 RR. hvy. melt.	43.75 to 44.25
Rerolling rails	51.50 to 52.50
Miscellaneous rails	46.00 to 46.50
Angles & splice bars	48.00 to 48.50
Locomotive tires, cut	46.00 to 46.50
Cut bolster & side frames	46.00 to 47.00
Standard stl. car axles	52.00 to 54.00
No. 3 steel wheels	45.50 to 46.50
Couplers & knuckles	45.50 to 46.50
Rails 2 ft. and under	50.00 to 51.00
Malleable	61.00 to 62.00
No. 1 mach. cast.	49.00 to 50.00
No. 1 agricul. cast.	46.00 to 47.00
Hvy. breakable cast.	40.00 to 41.00
RR. grate bars	43.50 to 44.00
Cast iron brake shoes	45.00 to 45.50
Cast iron carwheels	43.50 to 44.50

CINCINNATI

Per gross ton delivered to consumer:

No. 1 hvy. melting	$38.00 to $39.00
No. 2 hvy. melting	38.00 to 39.00
No. 1 bundles	38.00 to 39.00
No. 2 bundles	38.00 to 39.00
Mach. shop turn.	28.50 to 29.00
Shoveling turn.	30.50 to 31.00
Cast iron borings	28.50 to 29.00
Mixed bor. & turn.	28.00 to 29.00
Low phos. plate	39.00 to 40.00
No. 1 cupola cast.	44.00 to 45.00
Hvy. breakable cast.	35.00 to 36.00
Scrap rails	39.00 to 40.00

BOSTON

Dealers' buying prices per gross ton, f.o.b. cars:

No. 1 hvy. melting	$30.25 to $32.50
No. 2 hvy. melting	30.25 to 32.50
Nos. 1 and 2 bundles	30.25 to 30.50
Busheling	30.25 to 30.50
Shoveling turn.	26.50 to 27.00
Machine shop turn.	25.00 to 26.00
Mixed bor. & turn.	25.00 to 26.00
Cl'n cast. chem. bor.	27.00 to 29.00
No. 1 machinery cast.	38.00 to 40.00
No. 2 machinery cast.	35.00 to 38.00
Heavy breakable cast.	32.00 to 33.00
Stove plate	34.00 to 37.00

DETROIT

Per gross ton, brokers' buying prices, f.o.b. cars:

No. 1 hvy. melting	$34.00 to $35.00
No. 2 hvy. melting	34.00 to 35.00
No. 1 bundles	34.00 to 35.00
New busheling	34.00 to 35.00
Flashings	34.00 to 35.00
Mach. shop turn.	27.00 to 28.00
Shoveling turn.	28.00 to 29.00
Cast iron borings	28.00 to 29.00
Mixed bor. & turn.	28.00 to 29.00
Low phos. plate	38.00 to 39.00
No. 1 cupola cast	41.00 to 42.00
Hvy. breakable cast.	32.00 to 33.00
Stove plate	32.00 to 34.00
Automotive cast.	38.00 to 40.00

Going prices as obtained in the trade by THE IRON AGE, based on representative tonnages.

PHILADELPHIA

Per gross ton delivered to consumer:

No. 1 hvy. melting	$36.50 to $37.00
No. 2 hvy. melting	36.50 to 37.00
No. 1 bundles	36.50 to 37.00
No. 2 bundles	36.50 to 37.00
Mach. shop turn.	30.00 to 30.50
Shoveling turn.	30.00 to 30.50
Mixed bor. & turn.	30.00 to 30.50
Clean cast chemical bor.	35.00 to 36.50
No. 1 cupola cast.	48.00 to 49.00
Hvy. breakable cast.	46.00 to 47.00
Cast. charging box	46.00 to 47.00
Clean auto cast.	48.00 to 49.00
Hvy. axle forge turn.	38.50 to 39.00
Low phos. plate	42.00 to 43.00
Low phos. punchings	42.00 to 43.00
Low phos. bundles	40.00 to 41.00
RR. steel wheels	45.00 to 46.00
RR. coil springs	45.00 to 46.00
RR. malleable	58.00 to 60.00

ST. LOUIS

Per gross ton delivered to consumer:

No. 1 hvy. melting	$40.00 to $41.00
No. 2 hvy. melting	38.50 to 39.50
Bundled sheets	38.50 to 39.50
Mach. shop turn.	30.00 to 31.00
Locomotive tires, uncut	42.00 to 43.00
Mis. std. sec. rails	43.00 to 44.00
Rerolling rails	46.50 to 47.50
Steel angle bars	44.00 to 45.00
Rails 3 ft. and under	46.00 to 47.00
RR. steel springs	45.00 to 46.00
Steel car axles	45.00 to 46.00
Grate bars	37.00 to 38.00
Brake shoes	39.00 to 40.00
Malleable	59.00 to 61.00
Cast iron car wheels	42.50 to 43.50
No. 1 machinery cast	43.00 to 44.00
Hvy. breakable cast	38.00 to 39.00

BIRMINGHAM

Per gross ton delivered to consumer:

No. 1 hvy. melting	$34.00 to $35.00
No. 2 hvy. melting	34.00 to 35.00
No. 2 bundles	34.00 to 35.00
No. 1 busheling	34.00 to 35.00
Long turnings	23.00 to 24.00
Shoveling turnings	25.00 to 26.00
Cast iron borings	24.00 to 25.00
Bar crops and plate	38.00 to 38.50
Structural and plate	38.00 to 38.50
No. 1 cupola cast.	44.00 to 45.00
Stove plate	42.00 to 42.50
No. 1 RR. hvy. melt.	36.00 to 37.00
Steel axles	38.00 to 39.00
Scrap rails	37.50 to 38.00
Rerolling rails	41.00 to 42.00
Angles & splice bars	40.00 to 41.00
Rails 3 ft. & under	40.00 to 41.00
Cast iron carwheels	35.00 to 36.00

YOUNGSTOWN

Per gross ton delivered to consumer:

No. 1 hvy. melting	$39.50 to $40.00
No. 2 hvy. melting	39.50 to 40.00
Mach. shop turn.	33.00 to 34.00
Short shov. turn.	34.00 to 35.00
Cast iron borings	33.00 to 34.00
Low phos.	44.00 to 45.00

NEW YORK

Brokers' buying prices per gross ton, on cars:

No. 1 hvy. melting	$32.00 to $33.00
No. 2 hvy. melting	32.00 to 33.00
No. 2 bundles	32.00 to 33.00
Comp. galv. bundles	30.00 to 31.00
Mach. shop turn.	26.00 to 27.00
Mixed bor. & turn.	26.00 to 27.00
Shoveling turn.	28.00 to 29.00
No. 1 cupola cast.	40.00 to 41.00
Hvy. breakable cast.	40.00 to 41.00
Charging box cast.	40.00 to 41.00
Stove plate	40.00 to 41.00
Clean auto cast.	40.00 to 41.00
Unstrip. motor blks.	36.50 to 37.50
Cl'n chem. cast bor.	28.00 to 28.50

BUFFALO

Per gross ton delivered to consumer:

No. 1 hvy. melting	$37.00 to $38.00
No. 2 hvy. melting	37.00 to 38.00
No. 1 bundles	37.00 to 38.00
No. 2 bundles	37.00 to 38.00
No. 1 busheling	37.00 to 38.00
Mach. shop turn.	28.00 to 29.00
Shoveling turn.	30.00 to 31.00
Cast iron borings	28.00 to 29.00
Mixed bor. & turn.	28.00 to 29.00
No. 1 cupola cast.	40.00 to 42.00
Charging box cast.	36.00 to 38.00
Stove plate	39.00 to 40.00
Clean auto cast.	40.00 to 42.00
Small indl. malleable	39.00 to 41.00
RR. malleable	46.00 to 52.00
Low phos. plate	42.00 to 43.00
Scrap rails	40.00 to 41.00
Rails 3 ft. & under	44.00 to 45.00
RR. steel wheels	42.00 to 43.00
Cast iron carwheels	42.00 to 43.00
RR. coil & leaf spgs.	42.00 to 43.00
RR. knuckles & coup.	42.00 to 43.00

CLEVELAND

Per gross ton delivered to consumer:

No. 1 hvy. melting	$38.00 to $38.50
No. 2 hvy. melting	38.00 to 38.50
No. 1 bundles	38.00 to 38.50
No. 2 bundles	38.00 to 38.50
No. 1 busheling	38.00 to 38.50
Drop forge flashings	38.00 to 38.50
Mach. shop turn.	31.50 to 32.00
Shoveling turn.	32.50 to 33.00
Steel axle turn.	38.00 to 38.50
Cast iron borings	32.50 to 33.00
Mixed bor. & turn.	32.50 to 33.00
Low phos.	41.00 to 42.00
No. 1 machinery cast.	47.00 to 47.50
Malleable	54.00 to 55.00
RR. Cast.	47.00 to 47.50
Railroad grate bars	42.00 to 44.00
Stove plate	42.00 to 44.00
RR. hvy. melting	40.50 to 41.00
Rails 3 ft. & under	47.00 to 48.00
Rails 18 in. & under	48.00 to 49.00

SAN FRANCISCO

Per gross ton f.o.b. shipping point

No. 1 hvy. melting	$22.00
No. 2 hvy. melting	22.00
No. 2 bales	22.00

Per gross ton delivered to consumer

No. 3 bales	$16.50
Mach. shop turn.	13.00
Elec. furn. 1 ft. und.	26.00
No. 1 cupola cast.	$32.00 to 33.00
RR. hvy. melting	23.00

LOS ANGELES

Per gross ton delivered to consumer:

No. 1 hvy. melting	$22.50
No. 2 hvy. melting	22.50
No. 1 bales	22.50
No. 2 bales	22.50
No. 3 bales	16.00
Mach. shop turn.	14.50
No. 1 cupola cast.	$32.00 to 33.00
RR. hvy. melting	23.00

SEATTLE

Per gross ton delivered to consumer:

No. 1 & No. 2 hvy, melt.	$22.00 to $24.00
Elec. furn. 1 ft. and und.	27.00 to 28.50
No. 1 cupola cast.	30.00
RR. hvy. melting	23.00 to 25.00

HAMILTON, ONT.

Per gross ton delivered to consumer:
Cast grades f.o.b. shipping point

Heavy melting	$22.00*
No. 1 bundles	22.00*
No. 2 bundles	21.50*
Mechanical bundles	20.00*
Mixed steel scrap	19.00*
Mixed borings and turnings	17.00*
Rails, remelting	23.00*
Rails, rerolling	26.00*
Bushelings	17.00*
Bushelings, new fact., prep'd	21.00*
Bushelings, new fact., unprep'd	16.00*
Short steel turnings	17.00*
No. 1 cast.	36.00 to 40.00

*Ceiling Price.

Comparison of Prices . . .

Advances over past week in Heavy Type, declines in *Italics*. Prices are f.o.b. major basing points. The various basing points for finished and semifinished steel are listed in the detailed price tables.

Flat-Rolled Steel: (cents per pound)	Sept. 30, 1947	Sept. 23, 1947	Sept. 2, 1947	Oct. 1, 1946
Hot-rolled sheets	2.80	2.80	2.80	2.425
Cold-rolled sheets	3.55	3.55	3.55	3.275
Galvanized sheets (10 ga.)	3.95	3.95	3.95	4.05*
Hot-rolled strip	2.80	2.80	2.80	2.45
Cold-rolled strip	3.55	3.55	3.55	3.05
Plates	2.95	2.95	2.95	2.50
Plates wrought iron.....	6.85	6.85	6.85	4.112
Stain's c-r strip (No. 302)	30.30	30.30	30.30	30.30

*24 gage

Tin and Terneplate: (dollars per base box)	Sept. 30, 1947	Sept. 23, 1947	Sept. 2, 1947	Oct. 1, 1946
Tinplate, standard cokes.	$5.75	$5.75	$5.75	$5.00
Tinplate, electro (0.50 lb)	5.05	5.05	5.05	4.50
Special coated mfg. ternes	4.90	4.90	4.90	4.30

Bars and Shapes: (cents per pound)	Sept. 30, 1947	Sept. 23, 1947	Sept. 2, 1947	Oct. 1, 1946
Merchant bars	2.90	2.90	2.90	2.50
Cold-finished bars	3.55	3.55	3.55	3.10
Alloy bars	3.30	3.30	3.30	2.92
Structural shapes	2.80	2.80	2.80	2.35
Stainless bars (No. 302).	26.00	26.00	26.00	25.97
Wrought iron bars......	7.15	7.15	7.15	4.76

Wire and Wire Products: (cents per pound)	Sept. 30, 1947	Sept. 23, 1947	Sept. 2, 1947	Oct. 1, 1946
Bright wire	3.55	3.55	3.55	3.05
Wire nails	4.25	4.25	4.25	3.75

Rails: (dollars per 100 lb)	Sept. 30, 1947	Sept. 23, 1947	Sept. 2, 1947	Oct. 1, 1946
Heavy rails	$2.75	$2.75	$2.75	$43.39*
Light rails	2.85	2.85	2.85	49.18*

*per net ton

Semifinished Steel: (dollars per gross ton)	Sept. 30, 1947	Sept. 23, 1947	Sept. 2, 1947	Oct. 1, 1946
Rerolling billets	$45.00	$45.00	$45.00	$39.00
Sheet bars	66.00	66.00	66.00	38.00
Slabs, rerolling	45.00	45.00	45.00	39.00
Forging Billets	55.00	55.00	55.00	47.00
Alloy blooms, billets, slabs	66.00	66.00	66.00	58.43

Wire Rods and Skelp: (cents per pound)	Sept. 30, 1947	Sept. 23, 1947	Sept. 2, 1947	Oct. 1, 1946
Wire rods	2.80	2.80	2.80	2.30
Skelp	2.60	2.60	2.60	2.05

Pig Iron: (per gross ton)	Sept. 30, 1947	Sept. 23, 1947	Sept. 2, 1947	Oct. 1, 1946
No. 2, foundry, Phila.....	$41.22	$41.22	$41.22	$30.43
No. 2, Valley furnace....	36.50	36.50	36.50	28.50
No. 2, Southern Cin'ti...	39.75	39.75	39.75	27.80
No. 2, Birmingham	34.88	34.88	34.88	24.88
No. 2, foundry, Chicago†	36.00	36.00	36.00	28.50
Basic del'd Philadelphia.	40.72	40.72	40.72	29.93
Basic, Valley furnace	36.00	36.00	36.00	28.00
Malleable, Chicago†	36.50	36.50	36.50	28.50
Malleable, Valley	36.50	36.50	36.50	28.50
Charcoal, Chicago	49.49	49.49	49.49	42.34
Ferromanganese‡	135.00	135.00	135.00	135.00

---

† The switching charge for delivery to foundries in the Chicago district is $1 per ton.

‡ For carlots at seaboard.

Scrap: (per gross ton)	Sept. 30, 1947	Sept. 23, 1947	Sept. 2, 1947	Oct. 1, 1946
Heavy melt'g steel, P'gh.	$37.75	$37.75	$37.75	$20.00
Heavy melt'g steel, Phila.	36.75	36.75	37.00	18.75
Heavy melt'g steel, Ch'go	38.75	38.75	38.75	18.75
No. 1, hy. comp. sheet, Det.	34.50	34.50	34.50	17.32
Low phos. Youngs'n	44.50	44.50	44.50	22.50
No. 1, cast, Pittsburgh...	43.00	43.00	42.50	25.00
No. 1, cast, Philadelphia.	47.50	47.50	47.00	25.00
No. 1, cast, Chicago.....	49.50	49.50	49.50	25.00

Coke, Connellsville: (per net ton at oven)	Sept. 30, 1947	Sept. 23, 1947	Sept. 2, 1947	Oct. 1, 1946
Furnace coke, prompt...	$12.00	$12.00	$12.00	$8.75
Foundry coke, prompt...	13.75	13.75	13.75	8.50

Nonferrous Metals: (cents per pound to large buyers)	Sept. 30, 1947	Sept. 23, 1947	Sept. 2, 1947	Oct. 1, 1946
Copper, electro., Conn...	21.50	21.50	21.50	14.375
Copper, Lake, Conn.....	21.625	21.625	21.625	14.375
Tin, Straits, New York..	80.00	80.00	80.00	52.00
Zinc, East St. Louis.....	10.50	10.50	10.50	8.25
Lead, St. Louis.........	14.80	14.80	14.80	8.10
Aluminum, virgin	15.00	15.00	15.00	15.00
Nickel, electrolytic	37.67	37.67	37.67	35.00
Magnesium, ingot	20.50	20.50	20.50	20.50
Antimony, Laredo, Tex..	33.00	33.00	33.00	14.50

Composite Prices . .

Starting with the issue of Apr. 22, 1943, the weighted finished steel index was revised for the years 1941, 1942, and 1943. See explanation of the change on p. 90 of the Apr. 22, 1943, issue. Index revised to a quarterly basis as of Nov. 16, 1944; for details see p. 98 of that issue. The finished steel composite price for the current quarter is an estimate based on finished steel shipments for the previous quarter. This figure will be revised when shipments for this quarter are compiled.

	FINISHED STEEL	PIG IRON	SCRAP STEEL
Sept. 30, 1947	3.19141¢ per lb..........	.....$36.93 per gross ton.....	.....$37.75 per gross ton.....
One week ago	3.19141¢ per lb..........	.....$36.93 per gross ton.....	.....$37.75 per gross ton....
One month ago	3.19141¢ per lb..........	.....$37.08 per gross ton.....	.....$37.83 per gross ton.....
One year ago	2.73011¢ per lb..........	.....$28.13 per gross ton.....	.....$19.17 per gross ton....

	FINISHED STEEL		PIG IRON		SCRAP STEEL	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
1947....	3.19141¢ Aug. 5	2.87118¢ Jan. 7	$37.35 Aug. 19	$30.14 Jan. 7	$41.67 Aug. 5	$29.50 May 20
1946....	2.83599¢ Dec. 31	2.54490¢ Jan. 1	30.14 Dec. 10	25.37 Jan. 1	31.17 Dec. 24	19.17 Jan. 1
1945....	2.44104¢ Oct. 2	2.38444¢ Jan. 2	25.37 Oct. 23	23.61 Jan. 2	19.17 Jan. 2	18.92 May 22
1944....	2.30837¢ Sept. 5	2.21189¢ Oct. 5	$23.61	$23.61	19.17 Jan. 11	15.76 Oct. 24
1943....	2.29176¢	2.29176¢	23.61	23.61	$19.17	$19.17
1942....	2.28249¢	2.28249¢	23.61	23.61	19.17	19.17
1941....	2.43078¢	2.43078¢	$23.61 Mar. 20	$23.45 Jan. 2	$22.00 Jan. 7	$19.17 Apr. 10
1940....	2.30467¢ Jan. 2	2.24107¢ Apr. 16	23.45 Dec. 23	22.61 Jan. 2	21.83 Dec. 30	16.04 Apr. 9
1939....	2.35367¢ Jan. 3	2.26689¢ May 16	22.61 Sept. 19	20.61 Sept. 12	22.50 Oct. 3	14.08 May 16
1938....	2.58414¢ Jan. 4	2.27207¢ Oct. 18	23.25 June 21	19.61 July 6	15.00 Nov. 22	11.00 June 7
1937....	2.58414¢ Mar. 9	2.32263¢ Jan. 4	23.25 Mar. 9	20.25 Feb. 16	21.92 Mar. 30	12.67 June 9
1936....	2.32263¢ Dec. 28	2.05200¢ Mar. 10	19.74 Nov. 24	18.73 Aug. 11	17.75 Dec. 21	12.67 June 8
1935....	2.07642¢ Oct. 1	2.06492¢ Jan. 8	18.84 Nov. 5	17.83 May 14	13.42 Dec. 10	10.33 Apr. 29
1934....	2.15367¢ Apr. 24	1.95757¢ Jan. 2	17.90 May 1	16.90 Jan. 27	13.00 Mar. 13	9.50 Sept. 25
1933....	1.95578¢ Oct. 3	1.75836¢ May 2	16.90 Dec. 5	13.56 Jan. 3	12.25 Aug. 8	6.75 Jan. 3
1932....	1.89196¢ July 5	1.83901¢ Mar. 1	14.81 Jan. 5	13.56 Dec. 6	8.50 Jan. 12	6.43 July 5
1931....	1.99626¢ Jan. 13	1.86586¢ Dec. 29	15.90 Jan. 6	14.79 Dec. 15	11.33 Jan. 6	8.50 Dec. 29
1930....	2.25488¢ Jan. 7	1.97319¢ Dec. 9	18.21 Jan. 7	15.90 Dec. 16	15.00 Feb. 18	11.25 Dec. 9
1929....	2.31773¢ May 28	2.26498¢ Oct. 29	18.71 May 14	18.21 Dec. 17	17.58 Jan. 29	14.08 Dec. 8

Weighted index based on steel bars, shapes, plates, wire, rails, black pipe, hot and cold-rolled sheets and strip, representing major portion of finished steel shipments. Index recapitulated in Aug. 28, 1941, issue.

Based on averages for basic iron at Valley furnaces and foundry iron at Chicago, Philadelphia, Buffalo, Valley and Birmingham.

Based on No. 1 heavy melting steel scrap quotations to consumers at Pittsburgh, Philadelphia and Chicago.

Iron and Steel Prices . . .

Steel prices shown here are f.o.b. basing points in cents per pound or dollars per gross ton. Extras apply. Delivered prices do not reflect 3 pct tax on freight. Industry practice has discontinued arbitrary f.o.b. prices at Gulf and Pacific Ports. Space limitations prevent quotation of delivered prices at major ports. (1) Commercial quality sheet grade; primes, 25c above base. (2) Commercial quality grade. (3) Widths up to 12-in. inclusive. (4) 0.25 carbon and less. (5) Applies to certain width and length limitations. (6) For merchant trade. (7) For straight length material only from producers to fabricators. (8) Also shafting. For quantities of 20,000 lb to 89,999 lb. (9) Carload lot in manufacturing trade. (10) Delivered Los Angeles only. (11) Boxed. (12) Produced to dimensional tolerances in AISI Manual Sec. 6. (13) Delivered San Francisco only: Includes 3 pct freight tax. (14) Delivered Kaiser Co. prices: includes 3 pct freight tax. (15) to 0.035 to 0.075 in. thick by ¾ to 3½ in. wide. (16) Spot market as high as $92 gross ton. (17) Delivered Los Angeles: add ½c per 100 lb for San Francisco. (18) Slab prices subject to negotiation in most cases. Some producers charge (19) $2 more, (21) $1 more. Some producers charge (22) 0.05¢ less, (23) 0.10¢ less, (24) 0.20¢ less.

													DELIVERED TO		
Basing Points	Pittsburgh	Chicago	Gary	Cleveland	Birmingham	Buffalo	Youngstown	Sparrows Point	Granite City	Middletown, Ohio		San Franc'co, Los Angeles, Seattle	Detroit	New York	Philadelphia
INGOTS Carbon, rerolling					($36.00 f. o. b. mill) (Spot market as high as $80 gross ton)										
Carbon, forging	$46.00														
Alloy	$56.00									(Canton = $56.00)					
BILLETS, BLOOMS, SLABS Carbon, rerolling [18]	$45.00[19]	$45.00[19]	$45.00[19]	$47.00	$45.00[19]	$45.00[19]							$48.00[19]		
Carbon, forging billets	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00							$58.00		
Alloy	$66.00	$66.00				$66.00		(Bethlehem, Massillon, Canton = $66.00)					$69.00		
SHEET BARS[16]							$66.00								
PIPE SKELP	2.60¢[21]	2.65¢					2.60¢[21]	2.60¢[21]							
WIRE RODS	2.80¢[21]	2.80¢[21]		2.80¢[21]	2.85¢		(Worcester = 2.90¢[21])					3.52¢[13]			
SHEETS Hot-rolled	2.80¢	2.80¢	2.80¢	2.80¢	2.80¢	2.80¢	2.80¢	2.80¢	3.175¢	(Ashland, Ky. = 2.80¢)		3.54[17]¢	2.95¢	3.09¢	3.00¢
Cold-rolled[1]	3.55¢	3.55¢	3.55¢	3.55¢		3.55¢	3.55¢		3.65¢	3.55¢			3.70¢	3.96¢	3.93¢
Galvanized (10 gage),	3.95¢[23]	3.95¢[23]	3.95¢[23]		3.95¢[23]		3.95¢	3.95¢	4.05¢	(Ashland ,Ky. = 3.95¢)		4.62¢[17]		4.14¢	4.05¢
Enameling (12 gage)	3.95¢[22]	3.95¢[22]	3.95¢[22]	3.95¢			3.95¢		4.05¢	3.95¢			4.10¢[22]	4.38¢	4.33¢
Long ternes [2] (10 gage)	4.05¢[24]	4.05¢[24]	3.85¢											4.45¢	4.41¢
STRIP Hot-rolled [3]	2.80¢	2.80¢	2.80¢	2.80¢[15]	2.80¢		2.80¢					3.60¢[17]	2.95¢	3.23¢	3.18¢
Cold-rolled [4]	3.55¢	3.65¢		3.55¢			3.55¢			(Worcester = 3.75¢)			3.70¢	3.98¢	3.93¢
Cooperage stock	3.10¢	3.10¢			3.10¢		3.10¢							3.39¢	
TINPLATE Standard cokes, base box	$5.75	$5.75	$5.75		$5.85			$5.85	$5.85		(Warren, Ohio = $5.75)			$6.175	$6.062[11]
Electro, box 0.25 lb. 0.50 lb. 0.75 lb.					Deduct 90¢ from standard coke base box price. Deduct 70¢ from standard coke base box price. Deduct 50¢ from standard coke base box price.										
BLACKPLATE, 29 gage[5]	3.90¢	3.90¢	3.90¢		4.00¢			4.00¢	4.00¢					4.29¢	4.20¢
BLACKPLATE, CANMAKING 55 lb. to 70 lb. 75 lb. to 95 lb. 100 lb. to 118 lb.	Deduct $1.55 from standard coke base box. Deduct $1.65 from standard coke base box. Deduct $1.55 from standard coke base box.														
TERNES, MFG., Special coated	Deduct 85¢ from standard coke base box price.														
BARS Carbon steel	2.90¢	2.90¢	2.90¢	2.90¢	2.90¢	2.90¢	2.90¢					3.625¢[17]	3.05¢	3.31¢	3.28¢
Rail steel[6]	Subject to negotiation because of fluctuating scrap prices.														
Reinforcing (billet)[7]	2.75¢	2.75¢	2.75¢	2.75¢	2.75¢	2.75¢	2.75¢	2.75¢				3.325¢[17]		3.04¢	2.95¢
Reinforcing (rail)	Subject to negotiation because of fluctuating scrap prices.														
Cold-finished[8]	3.55¢	3.55¢	3.55¢	3.[illegible]¢		3.55¢							3.70¢	3.96¢	3.93¢
Alloy, hot-rolled	3.30¢	3.30¢				3.30¢	3.30¢	(Bethlehem, Massillon, Canton = 3.30¢)					3.45¢		3.44¢
Alloy, cold-drawn	4.10¢	4.10¢	4.10¢	4.10¢		4.10¢							4.25¢		
PLATE Carbon steel[12]	2.95¢	2.95¢	2.95¢	2.95¢	2.95¢		2.95¢	(Coatesville = 3.15¢, Claymont = 3.15¢, Geneva, Utah = 3.125¢) 2.95¢				3.78¢[14]		3.24¢	3.15¢
Floor plates	4.20¢	4.20¢												4.60¢	4.58¢
Alloy	3.80¢	3.80¢			(Coatesville = 4.50¢)									4.02¢	3.895¢
SHAPES, Structural	2.80¢	2.80¢	2.80¢		2.80¢	2.80¢	(Geneva, Utah = 2.975¢, Bethlehem = 2.80¢)					3.43¢[10]		3.00¢	2.94¢
SPRING STEEL, C-R 0.26 to 0.40 carbon	3.20¢			3.20¢			(Worcester = 3.40¢)								
0.41 to 0.60 carbon	4.70¢			4.70¢			(Worcester = 4.90¢)								
0.61 to 0.80 carbon	5.30¢			5.30¢			(Worcester = 5.50¢)								
0.81 to 1.00 carbon	6.80¢			6.80¢			(Worcester = 7.00¢)								
Over 1.00 carbon	9.10¢			9.10¢			(Worcester = 9.30¢)								
MANUFACTURERS' WIRE[9] Bright	3.55¢	3.55¢		3.55¢	3.55¢		(Worcester = 3.65¢, Duluth = 3.60¢)					4.56¢[13]		3.96¢	3.93¢
Galvanized					Add proper size extra and galvanizing extra to Bright Wire Base										
Spring (high carbon)	4.60¢	4.60¢		4.60¢	(Worcester = 4.70¢, Duluth = 4.85¢)					(Trenton = 4.85¢)		5.28¢[13]		4.66¢	4.595¢
PILING, Steel sheet	3.30¢	3.30¢				3.30¢								3.71¢	3.68¢

CORROSION AND HEAT RESISTANT STEELS

In cents per pound, f.o.b. basing point

Basing Point	Chromium Nickel		Straight Chromium			
	No. 304	No. 302	No. 410	No. 430	No. 442	No. 446
Ingot, P'gh, Chi, Canton, Balt, Reading, Ft. Wayne, Phila	Subject to negotiation		Subject to negotiation			
Blooms, P'gh, Chi, Canton, Phila, Reading, Ft. Wayne, Balt	Subject to negotiation		Subject to negotiation			
Slabs, P'gh, Chi, Canton, Balt, Phila, Reading	Subject to negotiation		Subject to negotiation			
Billets, P'gh, Chi, Canton, Watervliet, Syracuse, Balt	Subject to negotiation		Subject to negotiation			
Billets, forging, P'gh, Chi, Canton, Dunkirk, Balt, Phila, Reading, Water, Syracuse, Ft. Wayne, Titusville	23.00	22.50	17.50	17.50	21.00	25.50
Bars, h-r, P'gh, Chi, Canton, Dunkirk, Watervliet, Syracuse, Balt, Phila, Reading, Ft. Wayne, Titusville	27.50	26.00	20.50	21.00	24.50	30.00
Bars, c-f, P'gh, Chi, Cleve, Canton, Dunkirk, Syracuse, Balt, Phila, Reading, Ft. Wayne, Watervliet	27.50	26.00	20.50	21.00	24.50	30.00
Plates, P'gh, Middletown, Canton	31.50	29.50	23.50	24.00	28.00	33.00
Shapes, structural, P'gh, Chi	27.50	26.00	20.50	21.00	24.50	30.00
Sheets, P'gh, Chi, Middletown, Canton, Balt	39.00	37.00	29.00	31.50	35.50	39.50
Strip, h-r, P'gh, Chi, Reading, Canton, Youngstown	25.50	23.50	18.50	19.00	26.00	38.00
Strip, c-r, P'gh, Cleve, Newark, N. J., Reading, Canton, Youngstown	32.50	30.50	24.00	24.50	35.00	56.50
Wire, c-d, Cleve, Dunkirk, Syracuse, Balt, Reading, Canton, P'gh, Newark, N. J., Phila, Ft. Wayne	27.50	26.00	20.50	21.00	24.50	30.00
Wire, flat, c-r, Cleve, Balt, Reading, Dunkirk, Canton	32.46	30.30	23.80	24.34	34.62	56.26
Rod, h-r, Syracuse	27.05	25.97	20.02	20.56	24.34	29.75
Tubing, seamless, P'gh, Chi, Canton (4 to 6 in.)	72.09	72.09	.....	68.49	.....	.....

TOOL STEEL

*(F.o.b. Pittsburgh, Bethlehem, Syracuse, Dunkirk. *Also Canton, Ohio)*

W	*Cr*	*V*	*Mo*	*Co*	*Base Per lb*
18	4	1	—	—	82¢
18	4	1	—	5	$1.29
18	4	2	—	—	93¢
1.5	4	1.5	8	—	59¢
6	4	2	6	—	63¢
High-carbon-chromium*					47¢
Oil hardening manganese*					26¢
Special carbon*					24¢
Extra carbon*					20¢
Regular carbon*					17¢

Warehouse prices on and east of Mississippi are 2¢ per lb. higher; west of Mississippi, 4¢ higher.

ELECTRICAL SHEETS

Base, all grades f.o.b. Pittsburgh

	Per lb
Field grade	4.50¢
Armature	4.80¢
Electrical	5.30¢
Motor	6.05¢
Dynamo	6.75¢
Transformer 72	7.25¢
Transformer 65	7.95¢
Transformer 58	8.65¢
Transformer 52	9.45¢

F.o.b. Chicago and Gary, field grade through motor; f.o.b. Granite City, add 10¢ per 100 lb on field grade to and including dynamo.

RAILS, TRACK SUPPLIES

(F.o.b. mill)

Standard rails, heavier than 60 lb No. 1 O.H., per 100 lb	$2.75
Angle splice bars, 100 lb	3.25
(F.o.b. basing points)	*per 100 lb*
Light rails (from billets)	$3.10
Light rails (from rail steel), f.o.b. Williamsport, Pa.	3.45
	Base per lb
Cut spikes	4.85¢
Screw spikes	6.90¢
Tie plate, steel	3.05¢
Tie plates, Fittsburg, Calif.	3.20¢
Track bolts	7.00¢
Track bolts, heat treated, to rail roads	7.25¢

Basing points, light rails, Pittsburgh, Birmingham; cut spikes and tie plates—Pittsburgh, Chicago, Portsmouth, Ohio; Weirton, W. Va.; St. Louis, Kansas City, Minnequa, Colo.; Birmingham and Pacific Coast ports; tie plates alone—Steelton, Pa.; Buffalo. Cut spikes alone—Youngstown, Lebanon, Pa.; Richmond.

ROOFING TERNEPLATE

(F.o.b. Pittsburgh, 112 sheets)

	20x14 in.	20x28 in.
8-lb coating I.C.	$7.05	$14.10

CLAD STEEL

Base prices, cents per pound

Stainless-clad	*Plate*	*Sheet*
No. 304, 20 pct, f.o.b. Pittsburgh, Washington, Coatesville, Pa.	*24.00	*22.00
Nickel-clad 10 pct, f.o.b. Coatesville, Pa.	21.50	....
Inconel-clad 10 pct, f.o.b. Coatesville	30.00	....
Monel-clad 10 pct, f.o.b. Coatesville	29.00	....
Aluminized steel Hot dip, 20 gage, f.o.b. Pittsburgh	....	9.00

---

* Includes annealing and pickling, or sandblasting.

MERCHANT WIRE PRODUCTS

To the dealer f.o.b. Pittsburgh, Chicago, Cleveland, Birmingham, Duluth

	Base per keg	*Delivered San Francisco*
Standard & coated nails	$4.25†	$5.33
Galvanized nails‡‡	4.00†	5.08
Cut nails, carloads, Pittsburgh base	5.80*	....

---

† 10¢ additional at Cleveland, 35¢ at Worcester. ‡‡ Plus $2.75 per 100 lb galvanizing extra. *Less 20¢ to jobbers.

	Base per 100 lb	
Annealed fence wire	$4.20‡	$5.21
Annealed galv. fence wire	4.65‡	5.66

‡10¢ additional at Worcester.

To the dealer f.o.b. Pittsburgh, Chicago, Birmingham

	Base	*column*
Woven wire fence*	91	114
Fence posts, carloads	90††	...
Single loop bale ties	91	115
Galvanized barbed wire**	101	121
Twisted barbless wire	101	...

---

* 15½ gage and heavier. ** On 80-rod spools in carload quantities. ††Pittsburgh, Duluth.

HIGH STRENGTH, LOW ALLOY STEELS

base prices, cents per pound

Steel	Aldecor	Corten	Double Strength No. 1	Dynalloy	HI Steel	Mayari R	Otiscoloy	Yoloy	NAX High Tensile
Producer	Republic	Carnegie-Illinois, Republic	Republic	Alan Wood	Inland	Bethlehem	Jones & Laughlin	Youngstown Sheet & Tube	Great Lakes Steel
Plates	4.55	4.55	4.55	4.55	4.55	4.55	4.55	4.55	4.55
Sheets									
Hot-rolled	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30
Cold-rolled	5.30	5.30	5.30	....	5.30	5.30	5.30	5.30	5.30
Galvanized	....	5.85	....	....	....	6.00	....	....	....
Strip									
Hot-rolled	4.30	4.30	4.30	....	4.30	4.30	4.30	4.30	4.30
Cold-rolled	....	....	5.30	....	....	5.30	5.30	5.30	5.30†
Shapes	....	4.30	....	....	4.30	4.30	4.30	4.30	....
Beams	....	4.30	....	....	....	4.30	....	....	....
Bars									
Hot-rolled	4.45	4.45	4.45	....	....	4.45	4.45	4.45	4.45
Cold-rolled	....	....	....	....	....	....	....	....	....
Bar shapes	....	4.45	....	....	4.45	4.45	4.45	4.45	....

† Pittsburgh, add 0.10¢ at Chicago and Gary.

PIPE AND TUBING

Base discounts. f.o.b. Pittsburgh and Lorain, steel buttweld and seamless. Others f.o.b. Pittsburgh only
Base price, $200.00 per net ton

Standard, threaded & coupled

Steel, buttweld	Black	Galv,
½-in.	50½	34½
¾-in.	53½	38½
1-in.	56	41½
1¼-in.	56½	42
1½-in.	57	42½
2 in.	57½	43
2½ and 3-in,	58	43½
Wrought Iron, buttweld		
½-in.	+ 7	+29
¾-in.	2½	+19
1 and 1¼-in.	8	+11
1½-in.	13½	+ 7½
2-in.	14	+ 7
Steel, lapweld		
2-in.	49	34
2½ and 3-in.	52	37
3½ to 6-in.	54	39
Steel, seamless		
2-in.	48	33
2½ and 3-in.	51	36
3½ to 6-in.	53	38
Wrought Iron, lapweld		
2-in.	5½	+14½
2½ to 3½-in.	8	+10½
4-in.	12	+ 5
4½ to 8-in.	10	+ 6½

Extra Strong, plain ends

Steel, buttweld		
½-in.	49½	35
¾-in.	53½	39
1-in.	55½	42
1¼-in.	56	42½
1½-in.	56½	43
2-in.	57	43½
2½ and 3-in.	57½	44
Wrought Iron, buttweld		
½-in.	+ 2½	+23
¾-in.	3½	+17
1 to 2-in.	13	+ 7
Steel, lapweld		
2-in.	48	34
2½ and 3-in.	52	38
3½ to 6-in.	55½	41½
Steel, seamless		
2-in.	47	33
2½ and 3-in.	51	37
3½ to 6-in.	54½	40½
Wrought Iron, lapweld		
2-in.	8½	+11
2½ to 4-in.	17½	+ ½
4½ to 6-in.	13	+ 5

Basing discounts for standard pipe are for threads and couplings. For threads only, buttweld, lapweld and seamless pipe, one point higher discount (lower price) applies. For plain ends, buttweld, lapweld and seamless pipe 3-in. and smaller, three points higher discount (lower price) applies, while for lapweld and seamless 3½-in. and larger four points higher discount (lower price) applies. F.o.b. Gary prices are one point lower discount on all buttweld. On buttweld and lapweld steel pipe, jobbers are granted a discount of 5 pct. On l.c.l. shipments, prices are determined by adding 25 pct and 30 pct and the carload freight rate to the base card.

BOILER TUBES

Seamless steel and electric welded commercial boiler tubes and locomotive tubes, minimum wall. Net base prices per 100 ft, f.o.b. Pittsburgh in carload lots, cut length 4 to 24 ft, inclusive.

		Seamless		Electric Weld	
OD in in.	Gage BWG	Hot-Rolled	Cold-Drawn	Hot-Rolled	Cold-Drawn
2	13	$16.67	$19.99	$16.17	$19.39
2½	12	22.42	26.87	21.75	26.06
3	12	24.93	29.90	24.18	29.00
3½	11	31.17	37.39	30.23	36.27
4	10	38.69	46.38	37.53	44.99

CAST IRON WATER PIPE

	Per net ton
6-in. to 24-in. del'd Chicago	$85.06
6-in. to 24-in. del'd New York	83.30
6-in. to 24-in., Birmingham	74.50
6-in. and larger, f.o.b. cars, San Francisco, Los Angeles for all rail shipment; rail and water shipment less	98.50

Class "A" and gas pipe, $5 extra; 4-in. pipe is $5 a ton above 6-in.

BOLTS, NUTS, RIVETS, SET SCREWS

Bolts and Nuts

(F.o.b. Pittsburgh, Cleveland, Birmingham or Chicago)

Machine and Carriage Bolts

Base discount less case lots

	Percent Off List
½ in. & smaller x 6 in. & shorter	48
9/16 & ⅝ in. x 6 in. & shorter	50
All larger diam and longer lengths	47
Lag, all diam over 6 in. long	48
Lag, all diam x 6 in. & shorter	50
Plow bolts	57

Nuts, Cold Punched or Hot Pressed

(Hexagon or Square)

½ in. and smaller	48
9/16 to 1 in. inclusive	47
1⅛ to 1½ in. inclusive	45
1⅝ in. and larger	40

On above bolts and nuts, excepting plow bolts, additional allowance of 15 pct for full container quantities. There is an additional 5 pct allowance for carload shipments.

Semifin. Hexagon Nuts

Base discount less case lots

	USS	SAE
7/16 in. and smaller		51
½ in. and smaller	50	..
½ in. through 1 in.		48
9/16 in. through 1 in.	49	..
1⅛ in. through 1½ in.	47	46
1⅝ in. and larger	40	..

In full case lots, 15 pct additional discount. For 200 lb or more, freight allowed up to 50¢ per 100 lb, based on Cleveland, Chicago, Pittsburgh.

Stove Bolts

	Consumer
Packages, nuts separate	65 and 10
In bulk	75

On stove bolts freight allowed up to 65¢ per 100 lb based on Cleveland, Chicago, New York on lots of 200 lb or over.

Large Rivets

(½ in. and larger)

	Base per 100 lb
F.o.b. Pittsburgh, Cleveland, Chicago, Birmingham	$5.25
F.o.b. Lebanon, Pa.	5.40

Small Rivets

(7/16 in. and smaller)

	Percent Off List
F.o.b. Pittsburgh, Cleveland, Chicago, Birmingham	55 and 5

Cap and Set Screws

(In packages)

	Percent Off List *Consumer*
Hexagon head cap screws, coarse or fine thread, up to and incl. 1 in. x 6 in., SAE 1020, bright	56
¾ to 1 in. x 6 in., SAE 1035, heat treated	47
Set screws, cup and oval points	61
Milled studs	33
Flat head cap screws, listed sizes	21
Fillister head cap, listed sizes	40

Freight allowed up to 65¢ per 100 lb based on Cleveland, Chicago or New York on lots of 200 lb or over.

FLUORSPAR

Metallurgical grade, f.o.b. producing plant.

Effective CaF_2 Content:	*Base price per short ton*
70% or more	$33.00
65% but less than 70%	32.00
60% but less than 65%	31.00
Less than 60%	30.00

LAKE SUPERIOR ORES

(51.50% Fe, Natural Content, Delivered Lower Lake Ports)

	Per Gross Ton
Old range, bessemer	$5.95
Old range, nonbessemer	5.80
Mesabi, bessemer	5.70
Mesabi, nonbessemer	5.55
High phosphorus	5.55

Prices quoted retroactive to Jan. 1, 1947.

METAL POWDERS

Prices in cents per pound in ton lots, f.o.b. shipping point.

Brass, minus 100 mesh	24¢ to 28½¢
Copper, electrolytic, 100 and 325 mesh	30¢ to 31½¢
Copper, reduced, 150 and 200 mesh	29¢ to 30½¢
Iron, commercial, 100, 200, 325, mesh 96 + % Fe carlots	10¢ to 17¢
Swedish sponge iron, 100 mesh, c.i.f. N. Y., carlots, ocean bags	7.4¢ to 8.5¢
Iron, crushed, 200 mesh and finer, 90 + % Fe carload lots	5¢
Iron, hydrogen reduced, 300 mesh and finer, 98 + % Fe, drum lots	63¢ to 80¢
Iron, electrolytic, unannealed, 325 mesh and coarser, 99 + % Fe	35¢ to 37¢
Iron, electrolytic, annealed minus 100 mesh, 99 + % Fe	29¢ to 32¢
Iron carbonyl, 300 mesh and finer, 98-99.8 + % Fe	90¢ to $1.75
Aluminum, 100, 200 mesh, carlots	23¢ to 26¢
Antimony, 100 mesh	36.05¢
Cadmium, 100 mesh	$2.00
Chromium, 100 mesh and finer	$1.025
Lead, 100, 200, & 300 mesh	18.50¢ to 23.50¢
Manganese, minus 325 mesh and coarser	49¢
Nickel, 100 mesh	51½¢
Silicon, 100 mesh	26¢
Solder powder, 100 mesh	8½¢ plus metal
Stainless steel, 302, minus 100 mesh	75¢
Tin, 100 mesh	90¢
Tungsten metal powder, 98%-99%, any quantity, per lb.	$3.05
Molybdenum powder, 99%, in 100-lb kegs, f.o.b. York, Pa., per lb.	$2.65
Under 100 lb	$2.90

COKE

	Net Ton
Furnace, beehive (f.o.b. oven) Connellsville, Pa.	$11.50 to $12.50
Foundry, beehive (f.o.b. oven) Connellsville, Pa.	13.00 to 14.50
Foundry, Byproduct	
Chicago, del'd	$17.10
Chicago, f.o.b.	16.10
New England, del'd	19.50
Seaboard, Kearney, N. J., f.o.b.	17.85
Philadelphia, f.o.b.	16.75
Swedeland, Pa., f.o.b.	16.75
Buffalo, del'd	18.25
Ashland, Ohio, f.o.b.	15.50
Painesville, Ohio, f.o.b.	16.60
Erie, del'd	16.75
Cleveland, del'd	17.90
Cincinnati, del'd	15.39
St. Louis, del'd	18.03
Birmingham, del'd	15.00

REFRACTORIES

(F.o.b. Works)

Fire Clay Brick

	Carloads, Per 1000
No. 1, Ohio	$64.00
First quality, Pa., Md., Ky., Mo., Ohio	70.00
First quality, New Jersey	75.00
Sec. quality, Pa., Md., Ky., Mo, Ohio	64.00
Sec. quality, New Jersey	59.00
No. 2, Ohio	56.00
Ground fire clay, net ton, bulk	10.00

Silica Brick

Pennsylvania and Birmingham	$70.00
Chicago District and Alabama	79.00
Silica cement, net ton (Eastern)	12.00
East Chicago	13.00

Chrome Brick

	Per Net Ton
Standard chemically bonded, Balt., Plymouth Meeting, Chester	$59.00

Magnesite Brick

Standard, Balt. and Chester	$81.00
Chemically bonded, Baltimore	70.00

Grain Magnesite

Domestic, f.o.b. Balt. and Chester in bulk,	$44.50
Domestic, f.o.b. Chewelah, Wash., in bulk	24.00
in sacks	28.00

Dead Burned Dolomite

F.o.b. producing points in Pennsylvania, West Virginia and Ohio, per net ton, bulk. Midwest; add 10¢; Missouri Valley; add 20¢	10.55

WAREHOUSE PRICES

Base prices, delivered metropolitan areas, per 100 lb.

CITIES	SHEETS			STRIP		PLATES	SHAPES	BARS		ALLOY BARS			
	Hot-Rolled	Cold-Rolled (15 gage)	Galvanized (10 gage)	Hot-Rolled	Cold-Rolled		Standard Structural	Hot-Rolled	Cold-Finished	Hot-Rolled, A 4615 As-rolled	Hot-Rolled, A 4140-50 Ann.	Cold-Drawn, A 4615 As-rolled	Cold-Drawn, A 4140-50 Ann.
Philadelphia	$4.44	$5.18	$5.69	$4.73	$5.28	$4.79	$4.52	$4.78	$5.48	$8.32	$8.42	$9.83	$9.93
New York	4.67	5.67[1]	6.07	4.97	5.80	5.02	4.72	4.97	5.52	8.37	8.47	9.87	9.97
Boston	4.70	5.57[12]	5.50[12]	4.70	6.71	5.05	4.77	4.92	5.57	8.57	8.67	9.92	10.02
Baltimore	4.29	....	5.54	4.70	....	4.74	4.64	4.75	5.45	....	....	....	....
Norfolk	4.75	....	....	5.15	....	5.00	5.00	5.05	5.85	....	....	....	....
Chicago	4.25	5.10	5.65	4.35	5.45	4.60	4.40	4.40	5.10	8.05	8.15	9.30	9.40
Milwaukee	4.399	5.249[1]	5.799	4.499	5.599	4.749	4.549	4.549	5.249	8.349	8.449	9.599	9.699
Cleveland	3.95	4.55	5.238	4.188	5.00	4.25†	4.311	4.10	4.95	8.308	8.408	9.30	9.40
Buffalo	4.25	5.10	5.95	4.65	5.61[5]	4.90	4.40	4.40	5.10	8.05	8.15	9.30	9.40
Detroit	4.35	5.20	5.97	4.64	5.59	4.84†	4.72	4.50	5.22	8.46	8.56	9.69	9.79
Cincinnati	4.471	5.166	5.166	4.694	....	4.903	4.744	4.703	5.403	....	....	....	....
St. Louis	4.549	5.399[1]	5.974	4.649	5.774	4.899	4.699	4.699	5.424	8.524	8.624	9.774	9.874
Pittsburgh	4.25	5.10[1]	5.65	4.35	4.95	4.60	4.40	4.40	4.95	8.05	8.15	9.30	9.40
St. Paul	4.584[7]	5.434[1]	5.834[2]	4.684[7]	....	4.884[7]	4.734[7]	4.734[7]	4.826[6]	....	....	....	....
Omaha	4.868	6.118[1]	6.468	5.168	....	5.418	5.218	5.218	5.918	....	....	....	....
Indianapolis	4.51	5.29	5.84	4.61	5.46	4.86	4.66	4.65	5.36	....	....	....	....
Birmingham	4.45[11]	....	5.65	4.45[11]	....	4.65[11]	4.40[11]	4.40[11]	5.93	....	....	....	....
Memphis	4.82[11]	5.88[11]	6.37	5.02[11]	....	5.17[11]	4.97[11]	4.97[11]	5.88	....	....	....	....
New Orleans	*4.98[11]	6.29[1]	....	5.18[11]	....	5.33[11]	*5.03[11]	*5.13[11]	6.29[6]	....	....	....	....
Houston	5.30	....	6.60	5.25	....	5.35	5.15	5.30	6.60	8.75[16]	8.55[16]	9.70[16]	9.80[16]
Los Angeles	5.65	7.35[1]	7.10	5.95	8.70[5]	5.40	5.50	5.40	7.25[14]	9.90[15]	9.60[15]	11.35[15]	11.35[1]
San Francisco	5.20[8]	6.65	6.85	5.50[8]	....	5.30	5.20	5.05	7.35[10]	....	....	....	....
Seattle	5.30[4]	7.10[3]	6.70[2]	5.60[4]	....	5.45[4]	5.25[4]	5.45[4]	7.45[14]	....	9.75[6]	....	11.10[6]
Portland	5.30[4]	....	6.70	5.60[4]	....	5.45[4]	5.25[4]	5.55[4]	7.45[14]	....	....	....	....
Salt Lake City	6.25	....	7.50	6.75	....	6.10	6.25	6.35	7.40	....	....	....	....

BASE QUANTITIES

Standard unless otherwise keyed on prices.

HOT-ROLLED: Sheets, strip, plates, shapes and bars, 400 to 1999 lb.

COLD-ROLLED: Sheets, 400 to 1999 lb; strip, extras on all quantities; bars 1000 lb and over.

ALLOY BARS: 1000 to 1999 lb.

GALVANIZED SHEETS: 450 to 1499 lb.

EXCEPTIONS: (1) 400 to 1499 lb; (2) 450 to 1499 lb; (3) 300 to 4999 lb; (4) 300 to 999 lb; (5) 2000 lb and over; (6) 1000 lb and over; (7) 400 to 14,999 lb; (8) 400 lb and over; (9) 450 to 1499 lb; (10) 500 to 999 lb; (11) 400 to 399 lb; (12) 450 to 3749 lb; (13) 400 to 1999 lb; (14) 1500 lb and over; (15) 1000 to 4999 lb; (16) 4000 lb and over.

* Add 46¢ for sizes not rolled in Birmingham.

† Up to ¾ in. thick and 90 in. wide.

PIG IRON PRICES

Dollars per gross ton. Delivered prices represent minimums. Delivered prices do not include 3 pct tax on freight.

BASING POINT PRICES

Basing Point	Basic	No. 2 Foundry	Malleable	Bessemer	Low Phos.
Bethlehem	37.00	37.50	38.00	38.50	.....
Birdsboro	40.00	40.50	41.00	41.50	45.00
Birmingham	32.88-35.88	33.38-36.38	.....	.....	.....
Buffalo	36.00-37.50*	36.00-38.00*	36.50-38.50*	.....	.....
Chicago	35.50	36.00	36.50	37.00	.....
Cleveland	35.50-38.25*	36.00-38.75*	36.50-39.25*	.....	.....
Duluth	36.00	36.50	37.00	37.50	.....
Erie	35.50	36.00	36.50	37.00	.....
Everett	.....	45.00	45.50	.....	.....
Granite City	36.50	37.00	37.00	.....	.....
Neville Island	36.00	36.50	36.50	37.00	.....
Provo	37.00	37.50	.....	.....	.....
Sharpsville	36.00	36.50	36.50	37.00	.....
Steelton	37.00	.....	.....	.....	42.00
Struthers, Ohio	36.50	.....	.....	.....	.....
Swedeland	41.00	41.50	42.00	42.50	.....
Toledo	35.50	36.00	36.50	37.00	.....
Troy, N. Y.	37.00	37.50	38.00	38.50	42.00
Youngstown	36.00	36.50	36.50	37.00	.....

DELIVERED PRICES (BASE GRADES)

Consuming Point	Basing Point	Freight Rate	Basic	No. 2 Foundry	Malleable	Bessemer	Low Phos.
Boston	Everett	$0.50 Arb.	.....	45.50	46.00	.....	.....
Boston	Steelton	4.82	.....	.....	.....	.....	46.82
Brooklyn	Bethlehem	3.00	40.00	40.50	41.00	41.50	.....
Brooklyn	Birdsboro	3.50	.....	.....	.....	.....	48.50
Cincinnati	Birmingham	4.87	37.75-40.75	38.25-41.25	.....	.....	.....
Jersey City	Bethlehem	1.84	38.84	39.34	39.84	40.34	.....
Jersey City	Birdsboro	2.33	.....	.....	.....	.....	47.33
Los Angeles	Provo	5.94	42.94	43.44	.....	.....	.....
Mansfield	Cleveland-Toledo	2.33	37.83-40.58*	38.33-41.08*	38.83-41.58*	39.33	.....
Philadelphia	Bethlehem	1.67	38.67	39.17	39.67	40.17	.....
Philadelphia	Swedeland	1.01	42.01	42.51	43 01	43.51	.....
Philadelphia	Birdsboro	1.49	41.49	41.99	42.49	42.99	46.49
Philadelphia	Steelton	2.16	39.16	.....	.....	.....	44.16
San Francisco	Provo	5.94	42.94	43.44	.....	.....	.....
Seattle	Provo	5.94	42.94	43.44	.....	.....	.....
St. Louis	Granite City	0.75 Arb.	37.25	37.75	37.75	.....	.....

---

* Republic Steel Corp. price. Basis: Average price of No. 1 hvy. mlt. steel scrap at Cleveland or Buffalo respectively as shown in last week's issue of THE IRON AGE. Price is effective until next Sunday midnight.

Basing point prices are subject to switching charges; silicon differentials (not to exceed 50¢ per ton for each 0.25 pct silicon content in excess of base grade which is 1.75 to 2.25 pct); phosphorus differentials, a reduction of 38¢ per ton for phosphorus content of 0.70 pct and over; manganese differentials, a charge not to exceed 50¢ per ton for each 0.50 pct manganese content in excess of 1.00 pct. $2 per ton extra may be charged for 0.5 to 0.75 pct nickel content and $1 per ton extra for each additional 0.25 pct nickel.

Silvery iron (blast furnace) silicon 6.00 to 6.50 pct, C/L per g.t., f.o.b. Jackson, Ohio—$45.50; f.o.b. Buffalo — $46.75. Add $1.25 per ton for each additional 0.50 pct Si, up to 12 pct. Add 50¢ per ton for each 0.50 pct Mn over 1.00 pct. Add $1.00 per ton for 0.75 pct or more P. Bessemer ferrosilicon prices are $1.00 per ton above silvery iron prices of comparable analysis.

Charcoal pig iron base price for low phosphorous $44.00 per gross ton, f.o.b. Lyles, Tenn. Delivered to Chicago, $49.49. High phosphorous charcoal pig iron is not being produced.

Ferromanganese

78-82% Mn, maximum contract base price, gross ton, lump size, f.o.b. Baltimore, Philadelphia, New York, Birmingham, Rockwood, Tenn.

Carload lots (bulk)	$145 to $150
Less ton lots (packed)	172.00
Delivered Pittsburgh	151.00

$1.70 for each 1% above 82% Mn; penalty, $1.70 for each 1% below 78%.

Briquets—Cents per pound of briquet, freight allowed, 66% contained Mn.

	Eastern	Central	Western
Carload, bulk	8.00	8.25	8.80
Ton lots	9.00	9.60	11.50
Less ton lots	9.40	10.00	11.90

Spiegeleisen

Contract prices, gross ton, lump, f.o.b. Palmerton, Pa.

	16-19% Mn 3% max. Si	19-21% Mn 3% max. Si
Carloads	$46.00	$47.00
F.o.b Pittsburgh	50.00	51.00

Manganese Metal

Contract basis, 2 in. x down, cents per pound of metal, f.o.b. shipping point, freight allowed, eastern zone.

96% min. mn, 0.2% max. C, 1% max. Si, 2% max. Fe.

Carload, bulk	32
L.c.l. lots	34

Electrolytic Manganese

F.o.b. Knoxville, Tenn., freight allowed east of Mississippi, cents per pound.

Carloads	32
Ton lots	34
Less ton lots	36

Low-Carbon Ferromanganese

Contract price, cents per pound Mn contained, lump size, f.o.b. shipping point, freight allowed, eastern zone.

	Carloads	Ton	Less
0.06% max. C. 0.06% P, 90% Mn	23.00	24.10	24.70
0.10% max. C	22.50	23.60	24.20
0.15% max. C	22.00	23.10	23.70
0.30% max. C	21.50	22.60	23.20
0.50% max. C	21.00	22.10	22.70
0.75% max. C, 7.00% max. Si	18.00	19.10	19.70

Silicomanganese

Contract basis, lump size, cents per pound of metal, f.o.b. shipping point, freight allowed, 65-70% Mn, 17-20% Si, 1.5% max. C.

Carload, bulk	7.40
Ton lots	8.45
Briquet, contract basis, carlots, bulk freight allowed, per lb of briquet	7.65
Ton lots	8.65
Less ton lots	9.05

Silvery Iron (electric furnace)

Si 14.01 to 14.50%, $69.00 f.o.b. Keokuk, Iowa; $73.75 f.o.b. Niagara Falls. Add $1.00 per ton for each additional 0.50% Si up to and including 18%. Add 50¢ per ton for each 0.50 pct Mn over 1 pct.

Silicon Metal

Contract price, cents per pound contained Si, lump size, f.o.b. shipping point, freight allowed, for ton lots packed.

	Eastern	Central	Western
96% Si, 2% Fe	18.50	19.85	21.60
97% Si, 1% Fe	18.00	20.25	22.00

Ferrosilicon Briquets

Contract price, cents per pound of briquet, bulk, f.o.b. shipping point, freight allowed to destination, 40% Si. 1 lb Si briquets.

	Eastern	Central	Western
Carload, bulk	4.80	5.05	5.25
Ton lots	5.80	6.40	6.70
Less ton lots	6.20	6.80	7.10

Electric Ferrosilicon

Contract price, cents per pound contained Si, lump size in carloads, f.o.b. shipping point, freight allowed.

	Eastern	Central	Western
25% Si	15.00	15.65	15.90
50% Si	8.80	9.30	9.50
75% Si	11.20	11.50	12.25
80-90% Si	12.70	13.00	13.75
90-95% Si	14.35	14.65	15.35

Ferrochrome (*65-72%Cr, 2% max. Si*)

Contract prices, cents per pound, contained Cr, lump size in carloads, f.o.b. shipping point, freight allowed.

	Eastern	Central	Western
0.06% C	25.00	25.40	26.00
0.10% C	24.50	24.90	25.50
0.15% C	24.00	24.40	25.00
0.20% C	23.75	24.15	24.25
0.50% C	23.50	23.90	24.00
1.00% C	23.00	23.40	23.50
2.00% C	22.50	22.90	23.00
65-69% Cr, 4.9% C	17.60	18.00	18.15
62-66% Cr. 4-6% C. 6-9% Si.	18.60	19.00	19.15

Briquets — Contract price, cents per pound of briquet, f.o.b. shipping point, freight allowed, 60% chromium.

	Eastern	Central	Western
Carload, bulk	11.10	11.35	11.45
Ton lots	12.00	12.90	13.50
Less ton lots	12.40	13.30	13.90

High-Nitrogen Ferrochrome

Low-carbon type: 67-72% Cr, 0.75% N. Add 2¢ per lb to regular low carbon ferrochrome price schedule. Add 2¢ for each additional 0.25% N.

S. M. Ferrochrome

Contract price, cents per pound chrominum contained, lump sie, f.o.b. shipping point, freight allowed.

High carbon type: 60-65% Cr, 4-6% Si, 4-6% Mn, 4-6% C.

	Eastern	Central	Western
Carload	18.70	19.10	19.25
Ton lots	19.90	21.20	22.00
Less ton lots	20.60	21.90	22.70

Low carbon type: 62-66% Cr, 4-6% Si, 4-6% Mn, 1.25% max. C.

	Eastern	Central	Western
Carload	23.00	23.40	23.50
Ton lots	24.35	25.00	26.20
Less ton lots	25.35	26.00	27.20

Chromium Metal

Contract prices, cents per lb, chromium contained, carload, f.o.b. shipping point, freight allowed, 97% min. Cr, 1% max. Fe.

	Eastern	Central	Western
0.20% max. C	91.00	92.50	93.75
0.50% max. C	87.00	88.50	89.75
9.00% min. C	87.50	89.00	91.25

Calcium—Silicon

Contract price per lb of alloy, lump, f.o.b. shipping point, freight allowed.

30-35% Ca, 60-65% Si, 3.00% max. Fe or 28-32% Ca, 60-65% Si, 6.00% max. Fe.

	Eastern	Central	Western
Carloads	15.50	16.00	18.05
Ton lots	17.60	18.35	20.50
Less ton lots	18.60	19.35	21.50

Calcium—Manganese—Silicon

Contract prices, cents per lb of alloy, lump, f.o.b. shipping point, freight allowed.

16-20% Ca, 14-18% Mn, 53-59% Si.

	Eastern	Central	Western
Carloads	16.75	17.25	19.30
Ton lots	18.85	19.70	21.45
Less ton lots	19.85	20.70	22.45

Calcium Metal

Eastern zone contract prices, cents per pound of metal, f.o.b. shipping point, freight allowed. Add 1.5¢ for central zone; 3.5¢ for western zone.

	Cast	Turnings	Distilled
Ton lots	$1.85	$2.70	$3.40
Less ton lots	2.20	3.05	4.20

CMSZ

Contract price, cents per pound of alloy, f.o.b. shipping point, freight allowed.

Alloy 4: 45-49% Cr, 4-6% Mn, 18-21% Si, 1.25-1.75% Zr. 3.00-4.5% C.

Alloy 5: 50-56% Cr, 4-6% Mn, 13.50-16.00% Si, 0.75 to 1.25% Zr, 3.50-5.00% C.

	Eastern	Central	Western
Ton lots	17.25	18.35	20.30
Less ton lots	18.00	19.10	21.05

SMZ

Contract price, cents per pound of alloy, f.o.b. shipping point, freight allowed. 60-65% Si, 5-7% Mn. 5-7% Zr, 20% Fe, ½ in. x 12 mesh.

	Eastern	Central	Western
Ton lots	15.05	16.15	18.10
Less ton lots	15.80	16.90	18.85

Other Ferroalloys

Ferrotungsten, standard, lump or ¼ x down, packed, f.o.b. plant Niagara Falls, Washington, Pa. York, Pa., per pound contained W, 5 ton lots, freight allowed	$2.50
Ferrovanadium, 35-55%, contract basis, f.o.b. plant, freight allowances, per pound contained V.	
Openhearth	$2.90
Crucible	3.00
High speed steel (Primos)	3.10
Vanadium pentoxide, 88-92% V_2O_5 technical grade, contract basis, per pound contained V_2A_5	$1.20
Ferrocolumbium, 50-60%, contract basis, f.o.b. plant, freight allowed, per pound contained Cb	
Ton lots	$2.50
Less ton lots	$2.55
Ferromolybdenum, 55-75%, f.o.b Langeloth, Washington, Pa., per pound contained Mo.	95¢
Calcium molybdate, 40-45%, f.o.b Langeloth, Washington, Pa., Per pound contained Mo.	86¢
Molybdenum oxide briquets, 48-52% Mo, f.o.b. Langeloth, Pa., per pound contained Mo	80¢
Molybdenum oxide, in cans, f.o.b. Langeloth and Washington, Pa., per pound contained Mo	80¢
Ferrotitanium, 40-45%, 0.10% C max., f.o.b. Niagara Falls, N. Y. ton lots, per pound contained Ti	$1.23
Less ton lots	$1.25
Ferrotitanium, 20-25%, 0.10% C max., ton lots, per pound contained Ti	$1.35
Less ton lots	$1.40
High carbon ferotitanium, 15-20%, 6-8% C, contract basis, f.o.b. Niagara Falls, freight allowed, carloads, per net ton	$142.50
Ferrophosphorus, electrolytic, 23-26%, carlots, f.o.b. (Siglo) Tenn., $3 unitage per gross ton	$65.00
Zirconium, 35-40%, contract basis, f.o.b. plant, freight allowed, per pound of alloy.	
Carload lots	18.40¢
Zirconium, 12-15%, contract basis, lump, f.o.b. plant, freight allowed, per pound of alloy	
Carload, bulk	6.00¢
Alsifer, 20% Al, 40% Si, 40% Ft, contract basis, f.o.b. Suspension Bridge, N. Y.	
Carload	6.50¢
Ton lots	7.00¢
Simanal, 20% Si, 20% Mn, 20% Al, contract basis, f.o.b. Philo, Ohio, freight allowed, per pound	
Car lots	9.00¢
Ton lots	9.75¢

Boron Agents

Contract prices per pound of alloy, f.o.b. shipping point, freight allowed.

Ferroboron, 17-50% min. B, 1.50% max. Si, 0.50% max. Al, 0.50% max. C.

	Eastern	Central	Western
Less ton lots	$1.30	$1.3075	$1.329

Manganese — Boron 75.00% Mn, 15-20% B, 5% max. Fe, 1.50% max. Si, 3.00% max C.

	Eastern	Central	Western
Ton lots	$1.89	$1.903	$1.935
Less ton lots	2.01	2.023	2.044

Nickel—Boron 15-18% B, 1.00% max. Al, 1.50% max. Si, 0.50% max. C, 3.00% max. Fe, balance Ni.

	Eastern	Central	Western
Less ton lots	$1.80	$1.8125	$1.8445

Silcaz, contract basis, f.o.b. plant freight allowed, per pound.	
Carload lots	37.00¢
Grainal, f.o.b. Bridgeville, Pa., freight allowed, 50 lb and over.	
No. 1	87.5¢
No. 6	60¢
No. 79	45¢
Bortram, f.o.b. Niagara Falls	
Ton lots, per pound	45¢
Less ton lots, per pound	50¢
Carbortam, f.o.b., Suspension Bridge, N. Y., freight allowed, Ti 15—17%, B 0.90—1.15%, Si 2.5—3.0% Al 1.0—2.0%.	
Ton lots, per pound	8.0¢